BDP-BX18/S185/S186

RMT-B118A/B118P/B109C

SERVICE MANUAL

Self Diagnosis Supported model

Ver. 1.0 2011.08

Australian/NZ Model
Chinese Model
UK Model
Russian Model
BDP-S185

AEP Model
BDP-S185/S186

Canadian Model
US Model
BDP-S185/BX18

Photo: BDP-S185
Remote : RMT-B118A

SPECIFICATIONS

System
Laser: Semiconductor laser

Inputs and outputs
(Jack name:
Jack type/Output level/Load impedance)

LINE OUT R-AUDIO-L:
Phone jack/2 Vrms/10 kilohms

DIGITAL OUT (COAXIAL):
Phono jack/0.5 Vp-p/75 ohms

HDMI OUT:
HDMI 19-pin standard connector

LINE OUT VIDEO:
Phono jack/1.0 Vp-p/75 ohms

LAN (100):
100BASE-TX Terminal

USB:
USB jack Type A maximum current 500mA
(For connecting a USB device)

ENERGY STAR and the ENERGY STAR mark are registered U.S. marks. ENERGY STAR is a registered mark owned by the U.S. government.

(BDP-S185:US/BX18:US)

General
Power requirements:
120V AC, 60Hz (BDP-S185:US, CND/BX18)
220 – 240V AC, 50/60Hz (AEP,UK, AUS,RUS,CN)

Power consumption:
10 W

Dimensions (approx.):
290mm × 188mm × 42.5mm
(width/depth/height) incl. projecting parts

Mass (approx.):
1.1kg

Operating temperature:
5 ºC to 35 ºC(41°F to 95°F)

Operating humidity:
25 % to 80 %

Supplied accessories
- Audio/video cable (phono plug ×3) (1)(AUS,RUS,US,CND)
- HDMI cable (1) (BDP-S185:CN/BX18)
- Remote commander (remote) (1)
- Size AA (R6) batteries (2)

Specifications and design are subject to change without notice.

BLU-RAY DISC™ / DVD PLAYER

SONY®

Sony Corporation
Home Entertainment Business Group

9-890-762-11

2011H6900-1

© 2011.08

Published by Design Engineering Dept.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
6. Check the B+ voltage to see it is at the values specified.
7. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

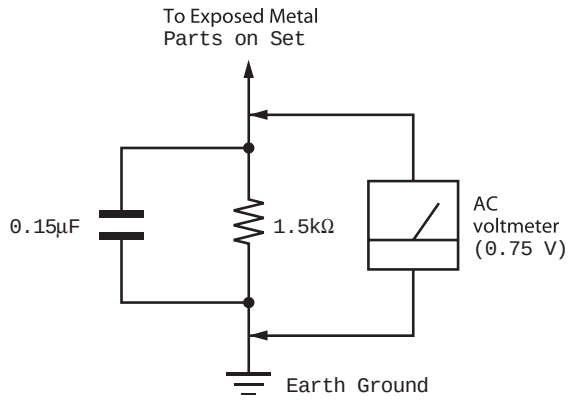


Fig. A. Using an AC voltmeter to check AC leakage.

WARNING!!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 25 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

CAUTION:

The use of optical instrument with this product will increase eye hazard.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION CLASS 3R VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EYE EXPOSURE.
VORSICHT KLASSE 3R SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG WENN GEÖFFNET. UNMITTELBAREN AUGENKONTAKT VERMEIDEN.
ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING AF KLASSE 3R VED ÅBNING. UNDGÅ AT SE DIREKTE PÅ STRÅLEN.
ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING I KLASSE 3R NÅR DEKSEL ÅPNES. UNNGÅ DIREKTE EKSPONERING AV ØYNENE.
VARNING KLASS 3R SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. UNDVIK ATT DIREKT EXPONERA ÖGONEN FÖR STRÅLNINGEN.
VARO! AVATTUNA LUOKAN 3R NÄKYVÄÄ JA NÄKYMÄTÖNTÄ LASERSÄTEILYÄ. VÄLTÄ KATSEEN SUORAA ALTISTAMISTA.
警告 打开时有3R类可见和不可见激光辐射，避免眼睛受到直射的照射
注意 打開時有第 3R 類可視及不可視雷射輻射，避免眼睛直接暴露。

This label is located on the laser protective housing inside the enclosure.

For customers in European countries

CLASS 1 LASER PRODUCT
LASER KLASSE 1
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT
1 类激光产品

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350°C.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

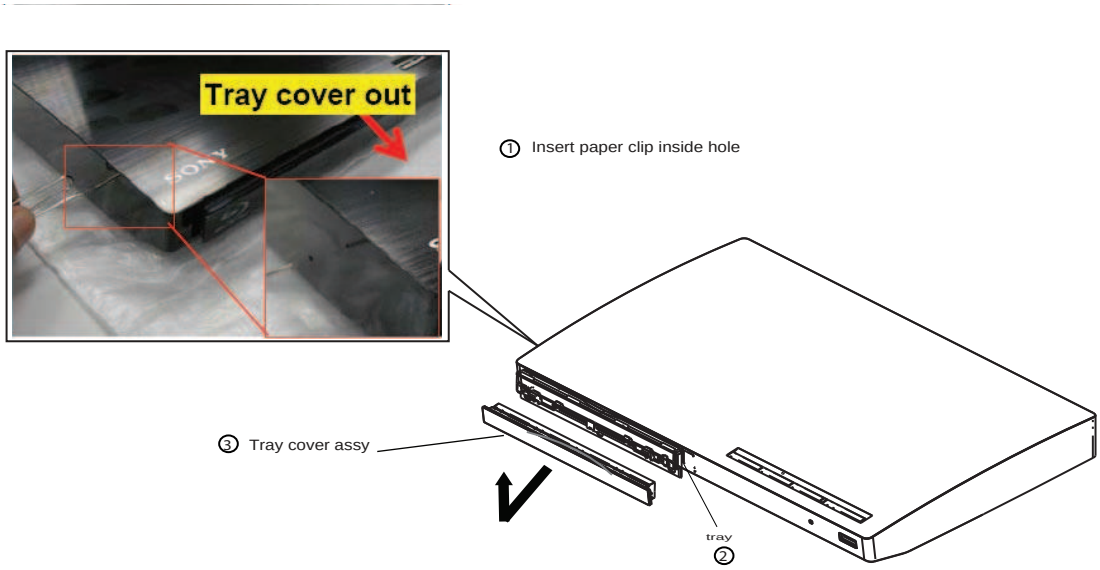
TABLE OF CONTENTS

Section	Title	Page
1.	SERVICE NOTE	
1-1.	Disc Removal Procedure If The Tray Cannot Be Ejected (Forced Ejection)	1-1
1-2.	Work when optical device are replaced	1-1
1-3.	Test Disc	1-2
1-3-1.	Operation and Display	1-2
1-3-2.	Main functions	1-9
1-4.	Drive Repairing	1-15
1-4-1.	Preparation	1-15
1-4-2.	Checking Flow ~ Drive (BU) section ~	1-15
1-4-3.	BU Check Flow [zz] ~	1-16
1-4-4.	BU (Optical Block) Repair Guide	1-16
1-4-5.	BU Adjustment Flow [yy] ~	1-17
1-4-6.	KEM-470AAA/C2RP Packing Spec.	1-17
1-4-7.	KEM-470AAA/C2RP Packing	1-18
1-4-8.	BU Data Decode Jig	1-19
1-4-9.	Loading For Service	1-20
1-4-10.	Laser Caution Label	1-20
1-5.	Rear Panel Assembly Caution	1-23E
2.	DISASSEMBLY	
2-1.	Disassembly Flow	2-1
2-2.	Tray Cover Assy	2-1
2-3.	Top Panel	2-2
2-4.	FR-316 Board, Switching Regulator	2-4
2-5.	Switching Regulator.	2-4
2-6.	MB-143 Board	2-5
2-7.	Drive	2-5
2-8.	Circuit Boards Location	2-6E
3.	BLOCK DIAGRAMS	
3-1.	Overall Block Diagram	3-1
3-2.	DSP Block Diagram	3-2
3-3.	AV OUT Block Diagram	3-3
3-4.	USB/ETHER, Block Diagram	3-4
3-5.	Power Block Diagram	3-5E
4.	SCHEMATIC DIAGRAMS	
4-1.	This Note Is Common For Schematic Diagrams	4-1
4-2.	Frame Schematic Diagram	4-2
4-3.	FR-316 Board (FRONT LEFT) Schematic Diagram	4-3
4-4.	FR-316 Board (USB FRONT) Schematic Diagram	4-4
4-5.	MB-143 Board (DDR 3 A) Schematic Diagram (1/14)	4-5
4-6.	MB-143 Board (DDR 3 B) Schematic Diagram (2/14)	4-6
4-7.	MB-143 Board (POWER) Schematic Diagram (3/14)	4-7
4-8.	MB-143 Board (CLK/POWER) Schematic Diagram (4/14)	4-8
4-9.	MB-143 Board (FLASH/HOST) Schematic Diagram (5/14)	4-9
4-10.	MB-143 Board (USB) Schematic Diagram (6/14)	4-10
4-11.	MB-143 Board (HDMI) Schematic Diagram (7/14)	4-11
4-12.	MB-143 Board (ETHERNET) Schematic Diagram (8/14)	4-12
4-13.	MB-143 Board (AUDIO) Schematic Diagram (9/14)	4-13
4-14.	MB-143 Board (VIDEO) Schematic Diagram (10/14)	4-14
4-15.	MB-143 Board (GPIO/JTAG) Schematic Diagram (11/14)	4-15
4-16.	MB-143 Board (IF CON) Schematic Diagram (12/14)	4-16
4-17.	MB-143 Board (FE_POWER/OP/GIO) Schematic Diagram (13/14)	4-17
4-18.	MB-143 Board (FE_POWER/MOTOR DRIVE) Schematic Diagram (14/14)	4-18
4-19.	Waveforms	4-19E
5.	PRINTED WIRING BOARDS	
5-1.	This Note Is Common For Printed Wiring Boards	5-1
5-2.	FR-316 Board (FRONT LEFT) Printed Wiring Board	5-2
5-3.	MB-138 Board(MAIN) Printed Wiring Board (Side A)	5-3
5-4.	MB-138 Board (MAIN) Printed Wiring Board (Side B)	5-4E
6.	IC PIN FUNCTION DESCRIPTION	6-1
7.	SERVICE MODE	7-1
8.	ERROR LOG LIST	8-1
9.	TROUBLESHOOTING	9-1
10.	REPAIR PARTS LIST	
10-1.	Exploded Views	10-1
10-1-1.	Case Section	10-1
10-1-2.	Main Chassis Section	10-2
10-1-3.	BD Section	10-3
10-1-4.	Accessories	10-4
10-2.	Electrical Parts List	10-5

SECTION 1
SERVICE NOTE

1-1. DISC REMOVAL PROCEDURE IF THE TRAY CANNOT BE EJECTED (FORCED EJECTION)

1. Remove the upper case. (Refer to page 2-1)
2. Insert a clip in the hole of a drive and open a tray.



1-2. Work when optical device are replaced

Note: Please do the following work when you replace the optical device.

1. Install it in PC after downloading two set of software from following URL.
   (Refer to "1-4-8. BU Data Decode Jig" on page 1-19)

   STEP 1
   Microsoft .NET Framework Version 2.0 Redistributable Package (x86)
   http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=0856eacb-4362-4b0d-8edd-aab15c5e04f5

   STEP 2
   Microsoft .NET Framework 2.0 Service Pack 1 (x86)
   http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=79bc3b77-e02c-4ad3-aacf-a7633f706ba5

2. Take a photograph of the bar code on the optical device. The valid bar code photo as shown in Fig.2

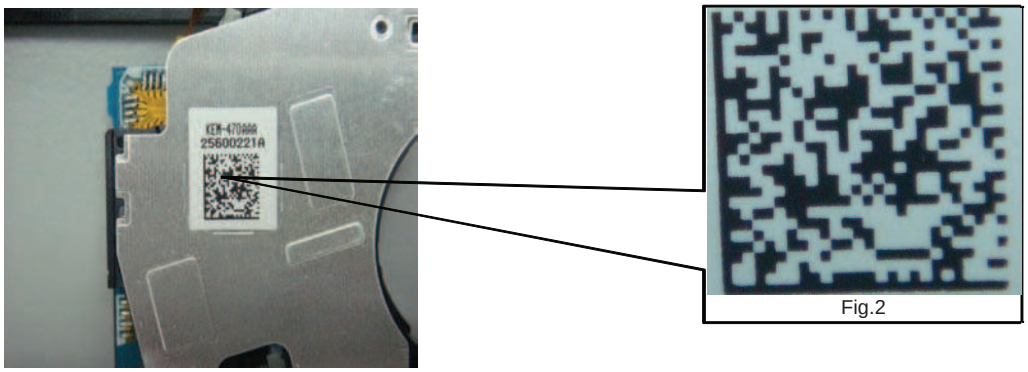


Fig.2

3. Drag-and-drop the bar code photograph to the icon of decode software (BDPRdec).
* The decode software is a complete set of "BDPRdec", "Tasman.Bars.dll", and "SavePath".
* Because decode software cannot be attached, it separately distributes it.

4. Input the password when you start decode software.
* Inquire of each service headquarters because the password cannot be disclosed.

5. Write the decode data to the set.
   (Refer to "1-4-4. BU (Optical Block) Repair Guide" on page 1-16 and "1-4-5. BU Adjustment Flow [yy]" on page 1-17)

1-3. TEST DISC

Part No.	Description	Layer
J-6090-199-A	BLX-104	Single Layer
J-6090-200-A	BLX-204	Dual Layer
J-2501-307-A	CD (HLX-A1)	
J-2501-305-A	HLX-513	Single Layer (NTSC)
J-2501-306-A	HLX-514	Dual Layer (NTSC)
J-6090-077-A	HLX-506	Single Layer (PAL)
J-6090-078-A	HLX-507	Dual Layer (PAL)

1-3-1. Operation and Display

Check Items

1) BLX-104
   1. Select 23.976Hz/1080p
   2. Play “4.Motion pictures”
   3. Check whether player can play back or not
   4. Check each outputs
      Video:
      Composite/component/HDMI
      Audio:
      Digital out (Coaxial/Optical)/Audio out/5.1Ch output

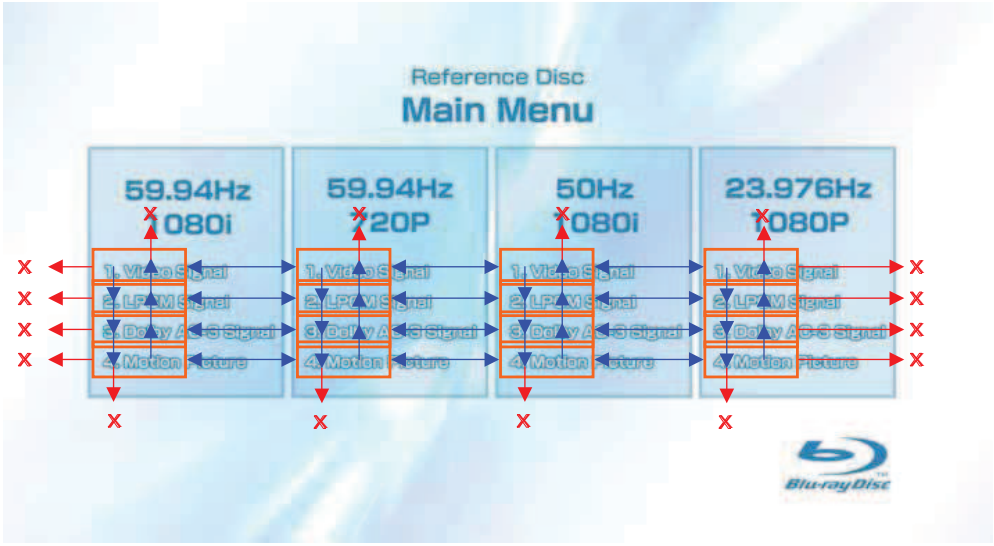
* When 1080/24p monitor is nothing, 1080i (59.94Hz or 50Hz) can use instead of 1080/24p.
However this is temporary correspondence.

2) BLX-204
   1. Select 1080i (59.94Hz or 50Hz)
   2. Play “4.Motion pictures”
   3. Check whether player can play back or not
      (Check the picture and sound output)

3) CD (HLX-A1)
   Check whether player can play back or not
   (Check the sound output)

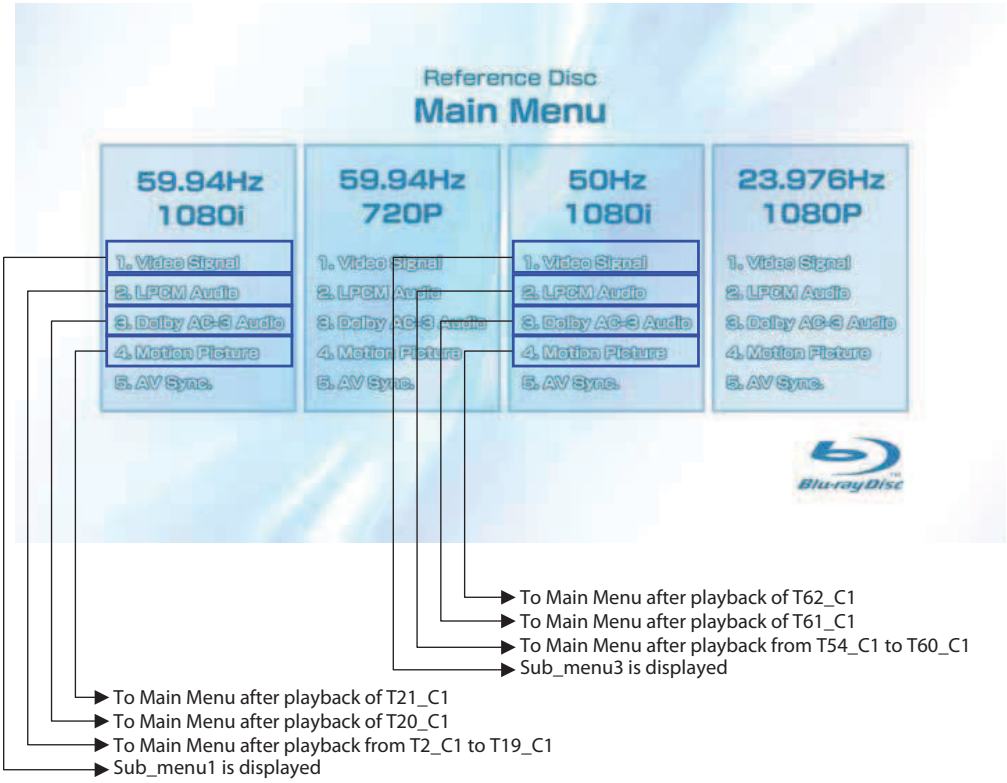
4) HLX-513/514 (NTSC), HLX-506/507 (PAL)
   1. After displayed Main Menu, select “1.Video”
   2. Play “1.Color Bar 100%”
      (Check the picture and sound output)
   3. Return to Menu
   4. Play “Demonstration 4:3” or “5.Demonstration 16:9”
      (Check the picture and sound output)

1-3-1-1. BLX-104 Menu Function (1)
Main Menu



1) When the disc is inserted, 1. Video Signal of 59.94Hz/1080i of the Main Menu is selectively displayed.

1-3-1-2. BLX-104 Menu Function (2)
Main Menu

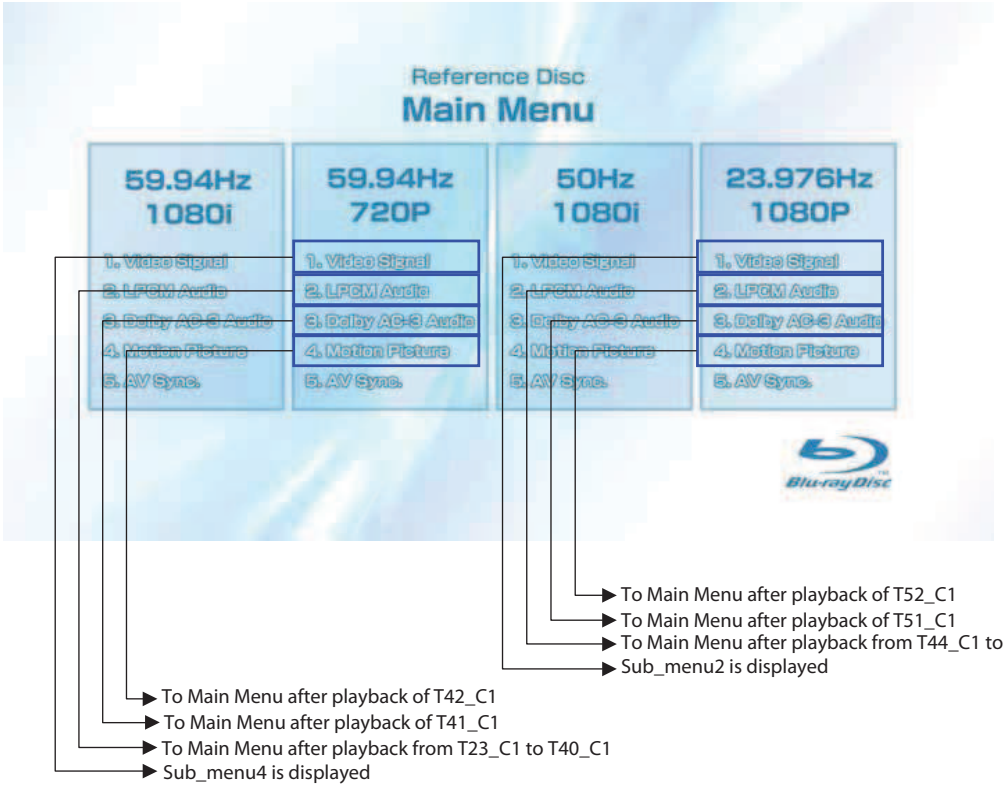

Reference Disc
Main Menu
59.94Hz 1080i
59.94Hz 720P
50Hz 1080i
23.976Hz 1080P
1. Video Signal
2. LPCM Audio
3. Dolby AC-3 Audio
4. Motion Picture
5. AV Sync.
Blu-ray Disc
To Main Menu after playback of T62_C1
To Main Menu after playback of T61_C1
To Main Menu after playback from T54_C1 to T60_C1
Sub_menu3 is displayed
To Main Menu after playback of T21_C1
To Main Menu after playback of T20_C1
To Main Menu after playback from T2_C1 to T19_C1
Sub_menu1 is displayed

* When returning to Main Menu after playback from each button of 59.94Hz/1080i, 1. Video Signal of 59.94Hz/1080i is selectively displayed.
* When returning to Main Menu after playback from each button of 50Hz/1080i, 1. Video Signal of 50Hz/1080i is selectively displayed.
* 5. AV Sync does not operate.

Note:

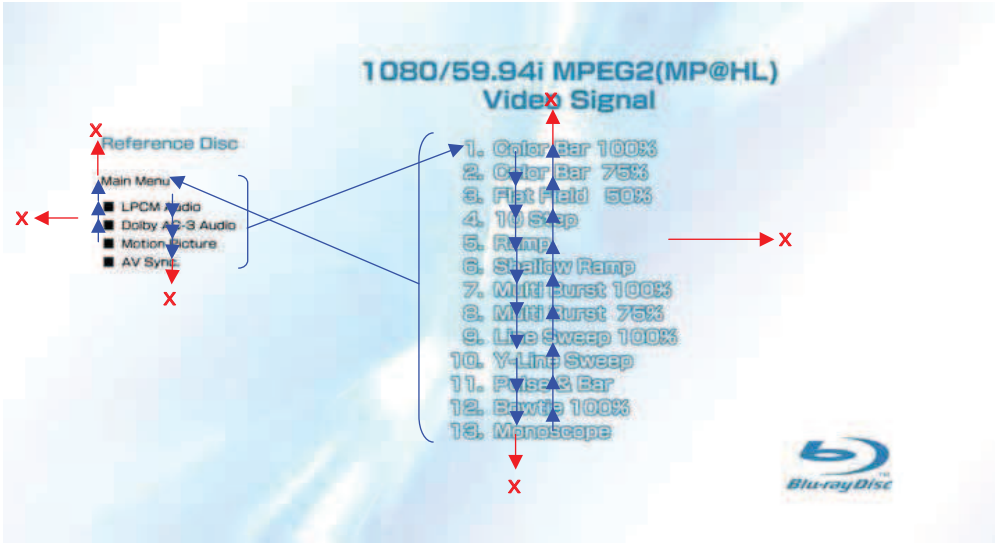
Txx_ Cxx
- Cxx: Chapter No.
- Txx: Title No.

1-3-1-3. BLX-104 Menu Function (3)
Main Menu


Reference Disc
Main Menu
59.94Hz 1080i
59.94Hz 720P
50Hz 1080i
23.976Hz 1080P
1. Video Signal
2. LPCM Audio
3. Dolby AC-3 Audio
4. Motion Picture
5. AV Sync.
Blu-ray Disc
To Main Menu after playback of T52_C1
To Main Menu after playback of T51_C1
To Main Menu after playback from T44_C1 to T50_C1
Sub_menu2 is displayed
To Main Menu after playback of T42_C1
To Main Menu after playback of T41_C1
To Main Menu after playback from T23_C1 to T40_C1
Sub_menu4 is displayed

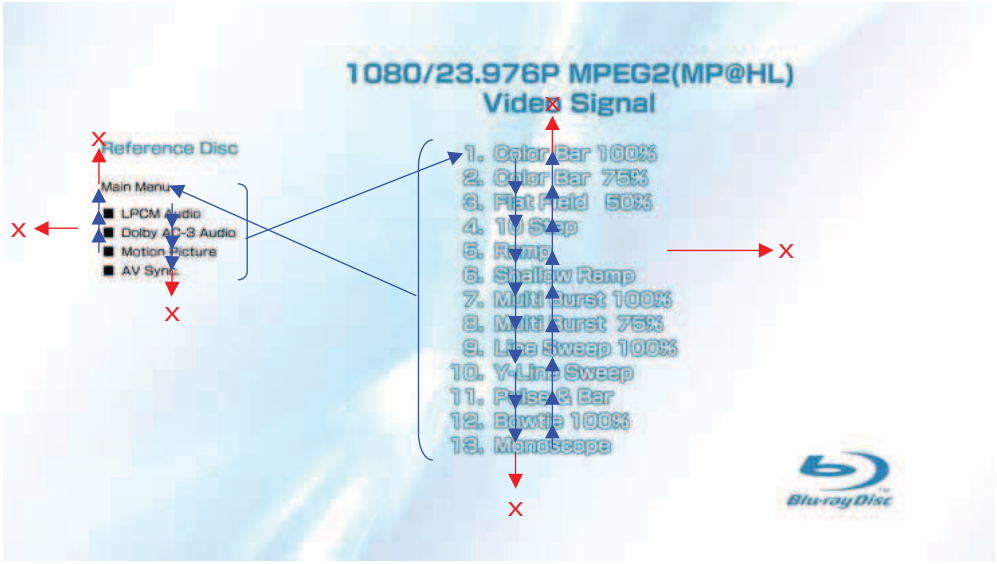
* When returning to Main Menu after playback from each button of 59.94Hz/720P, 1. Video Signal of 59.94Hz/720P is selectively displayed.
* When returning to Main Menu after playback from each button of 23.976Hz/1080P, 1. Video Signal of 23.976Hz/1080P is selectively displayed.
* 5. AV Sync does not operate.

1-3-1-4. BLX-104 Menu Function (4)
Sub menu1



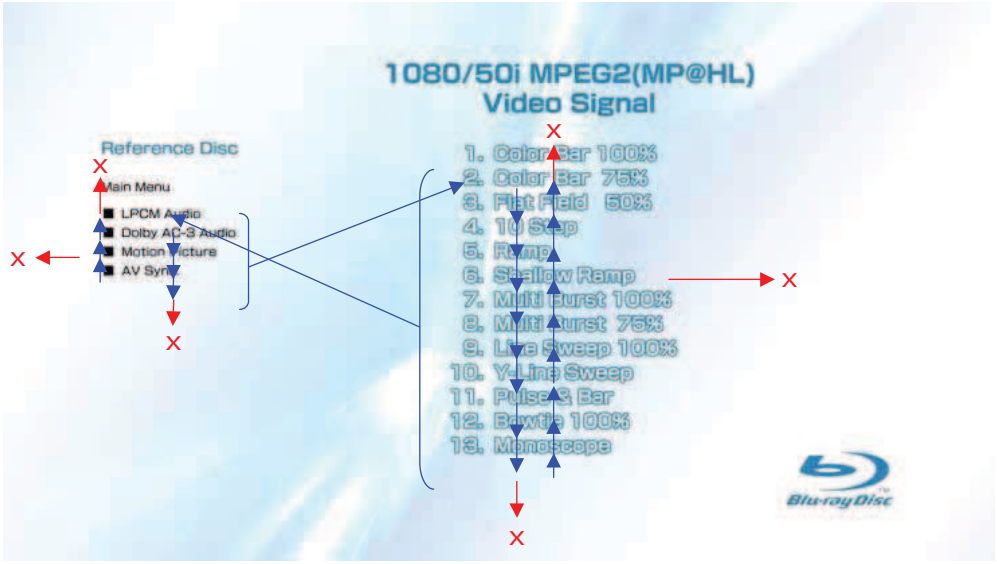
1) At the display of Sub menu1, 1. Color Bar 100% is selectively displayed.
2) Selection of 1. Color Bar 100% t Return to Sub menu1 after seamless playback from T1_C1 to T1_C13. 1. Color Bar 100% is selectively displayed on Sub menu1 screen.
3) Selection of 2. Color Bar 75% t Return to Sub menu1 after seamless playback from T1_C2 to T1_C13. 1. Color Bar 100% is selectively displayed on Sub menu1 screen.
4) At the selection of 3 - 13, item 3 mentioned above is executed as the routine.
5) At the display of Sub menu1, Main Menu is selected t Jump to Main Menu. At the display of Main Menu, 1. Video Signal of 59.94Hz/1080i is selectively displayed.
6) Selection of LPCM Audio t Playback from T2_C1 to T19_C1. SubPic that corresponds to Audio stream 1 is forcibly displayed. During the playback, when audio channel changes, the caption that corresponds to each audio stream is forcibly displayed. Return to Sub menu1 after playback. 1. Color Bar 100% is selectively displayed on Sub menu1 screen.
7) Selection of Dolby AC-3 Audio t Playback of T20_C1. SubPic that corresponds to Audio stream 1 is forcibly displayed. During the playback, when audio channel changes, the caption that corresponds to each audio stream is forcibly displayed. Return to Sub menu1 after playback. 1. Color Bar 100% is selectively displayed on Sub menu1 screen.
8) Selection of Motion Picture t Return to Sub menu1 after playback of T21_C1. 1. ColorBar 100% is selectively displayed on Sub menu1 screen.
9) At the selection of Main Menu, 1. VideoSignal of 1080/59.94i of Main Menu is selectively displayed.
10) AV Sync does not operate.

1-3-1-5. BLX-104 Menu Function (5)
Sub menu2



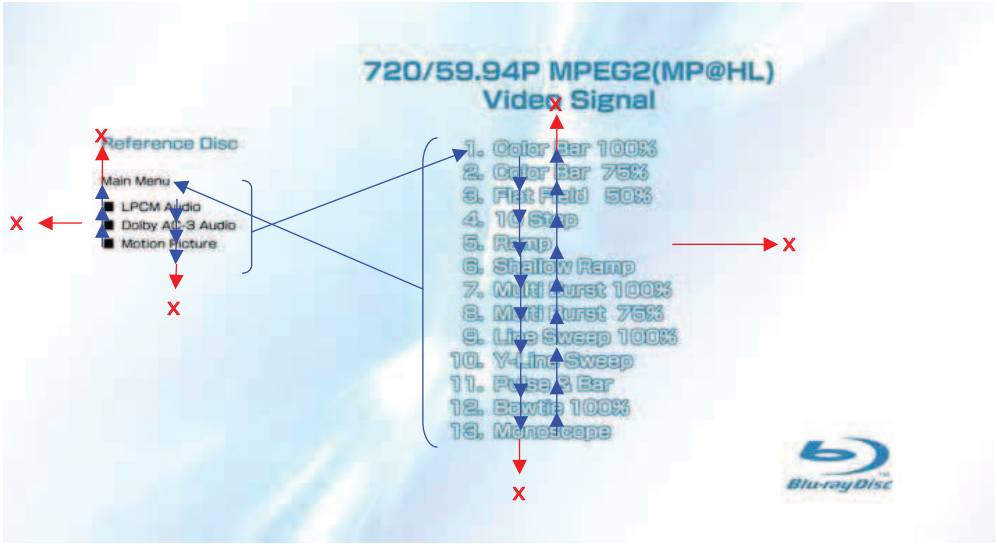
1) At the display of Sub menu2, 1. Color Bar 100% is selectively displayed.
2) Selection of 1. Color Bar 100% t Return to Sub menu2 after seamless playback from T43_C1 to T43_C13. 1. Color Bar 100% is selectively displayed on Sub menu2 screen.
3) Selection of 2. Color Bar 75% t Return to Sub menu2 after seamless playback from T43_C2 to T43_C13. 1. Color Bar 100% is selectively displayed on Sub menu2 screen.
4) At the selection of 3 - 13, item 3 mentioned above is executed as the routine.
5) At the display of Sub menu2, Main Menu is selected t Jump to Main Menu. At the display of Main Menu, 1. Video Signal of 23.976Hz/1080P is selectively displayed.
6) Selection of LPCM Audio t Playback from T44_C1 to T50_C1. SubPic that corresponds to Audio stream 1 is forcibly displayed. During the playback, when audio channel changes, the caption that corresponds to each audio stream is forcibly displayed. Return to Sub menu2 after playback. 1. Color Bar 100% is selectively displayed on Sub menu2 screen.
7) Selection of Dolby AC-3 Audio t Playback of T51_C1. SubPic that corresponds to Audio stream 1 is forcibly displayed. During the playback, when audio channel changes, the caption that corresponds to each audio stream is forcibly displayed. Return to Sub menu2 after playback. 1. Color Bar 100% is selectively displayed on Sub menu2 screen.
8) Selection of Motion Picture t Return to Sub menu2 after playback of T52_C1. 1. Color Bar 100% is selectively displayed on Sub menu2 screen.
9) At the selection of Main Menu, 1. Video Signal of 1080/23.976P of Main Menu is selectively displayed.
10) AV Sync does not operate.

1-3-1-6. BLX-104 Menu Function (6)
Sub menu3



1) At the display of Sub menu3, 1. Color Bar 100% is selectively displayed.
2) Selection of 1. Color Bar 100% t Return to Sub menu3 after seamless playback from T53_C1 to T53_C13. 1. Color Bar 100% is selectively displayed on Sub menu3 screen.
3) Selection of 2. Color Bar 75% t Return to Sub menu3 after seamless playback from T53_C2 to T53_C13. 1. Color Bar 100% is selectively displayed on Sub menu3 screen.
4) At the selection of 3 - 13, item 3 mentioned above is executed as the routine.
5) At the display of Sub menu3, Main Menu is selected t Jump to Main Menu. At the display of Main Menu, 1. Video Signal of 50Hz/1080i is selectively displayed.
6) Selection of LPCM Audio t Playback from T54_C1 to T60_C1. SubPic that corresponds to Audio stream 1 is forcibly displayed. During the playback, when audio channel changes, the caption that corresponds to each audio stream is forcibly displayed. Return to Sub menu3 after playback. 1. Color Bar 100% is selectively displayed on Sub menu3 screen.
7) Selection of Dolby AC-3 Audio t Playback of T61_C1. SubPic that corresponds to Audio stream 1 is forcibly displayed. During the playback, when audio channel changes, the caption that corresponds to each audio stream is forcibly displayed. Return to Sub menu3 after playback. 1. Color Bar 100% is selectively displayed on Sub menu3 screen.
8) Selection of Motion Picture t Return to Sub menu3 after playback of T62_C1. 1. Color Bar 100% is selectively displayed on Sub menu3 screen.
9) At the selection of Main Menu, 1. Video Signal of 1080/50i of Main Menu is selectively displayed.
10) AV Sync does not operate.

1-3-1-7. BLX-104 Menu Function (7)
Sub menu4

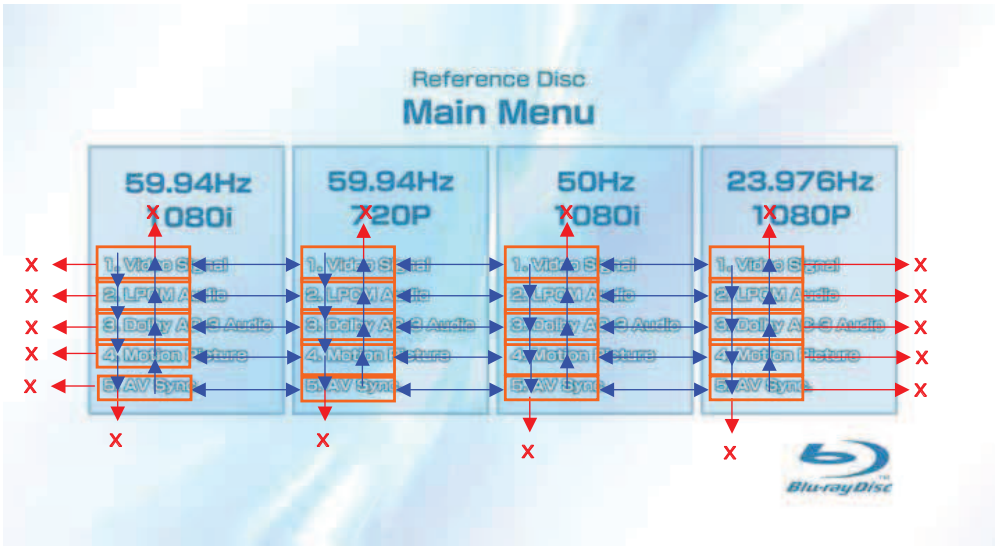


1) At the display of Sub menu4, 1. Color Bar 100% is selectively displayed.
2) Selection of 1. Color Bar 100% t Return to Sub menu4 after seamless playback from T22_C1 to T22_C13. 1. Color Bar 100% is selectively displayed on Sub menu4 screen.
3) Selection of 2. Color Bar 75% t Return to Sub menu4 after seamless playback from T22_C2 to T22_C13. 1. Color Bar 100% is selectively displayed on Sub menu4 screen.
4) At the selection of 3 - 13, item 3 mentioned above is executed as the routine.
5) At the display of Sub menu4, Main Menu is selected t Jump to Main Menu. At the display of Main Menu, 1. Video Signal of 59.94Hz/720P is selectively displayed.
6) Selection of LPCM Audio t Playback from T44_C1 to T50_C1. SubPic that corresponds to Audio stream 1 is forcibly displayed. During the playback, when audio channel changes, the caption that corresponds to each audio stream is forcibly displayed. Return to Sub menu4 after playback. 1. Color Bar 100% is selectively displayed on Sub menu4 screen.
7) Selection of Dolby AC-3 Audio t Playback of T51_C1. SubPic that corresponds to Audio stream 1 is forcibly displayed. During the playback, when audio channel changes, the caption that corresponds to each audio stream is forcibly displayed. Return to Sub menu4 after playback. 1. Color Bar 100% is selectively displayed on Sub menu4 screen.
8) Selection of Motion Picture t Return to Sub menu4 after playback of T52_C1. 1. Color Bar 100% is selectively displayed on Sub menu4 screen.
9) At the selection of Main Menu, 1. Video Signal of 720/59.94P of Main Menu is selectively displayed.
10) AV Sync does not operate.

1-3-2 Menu Function

1-3-2-1. BLX-204 Menu Function (1)

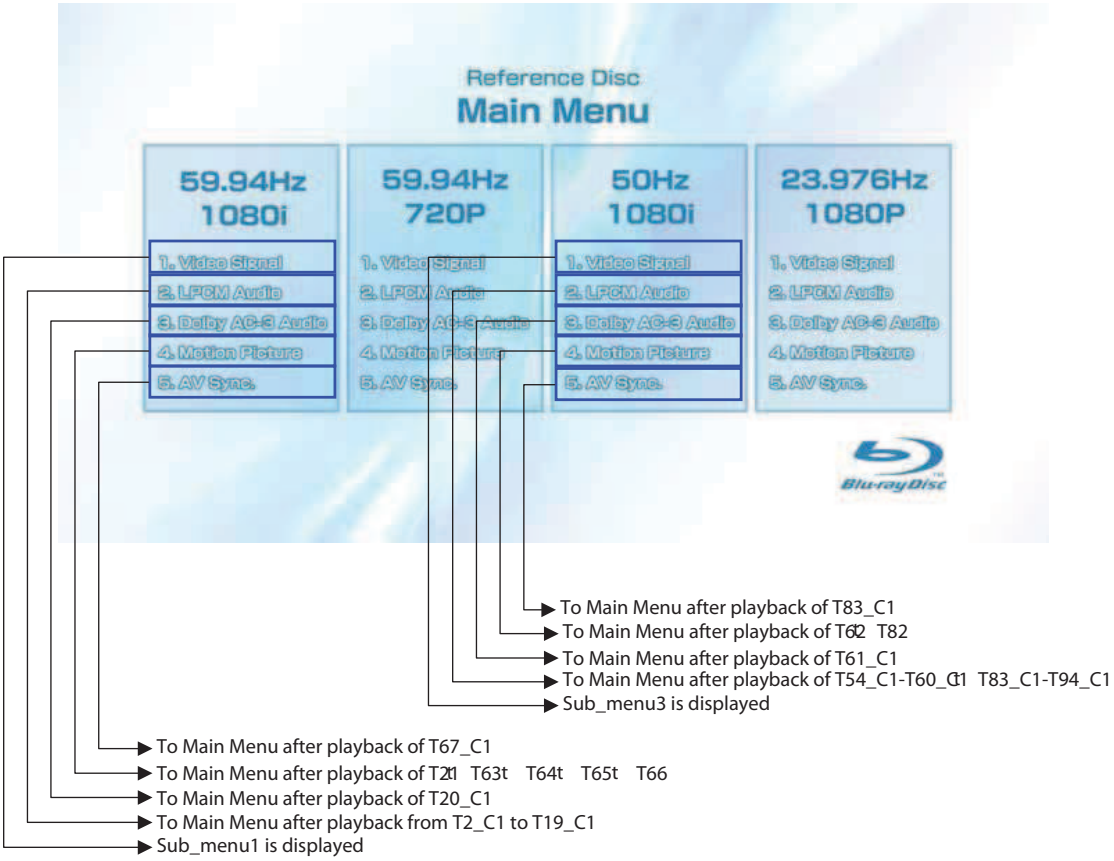
Main Menu



1) When the disc is inserted, 1. Video Signal of 59.94Hz/1080i of the Main Menu is selectively displayed.

1-3-2-2. BLX-204 Menu Function (2)

Main Menu



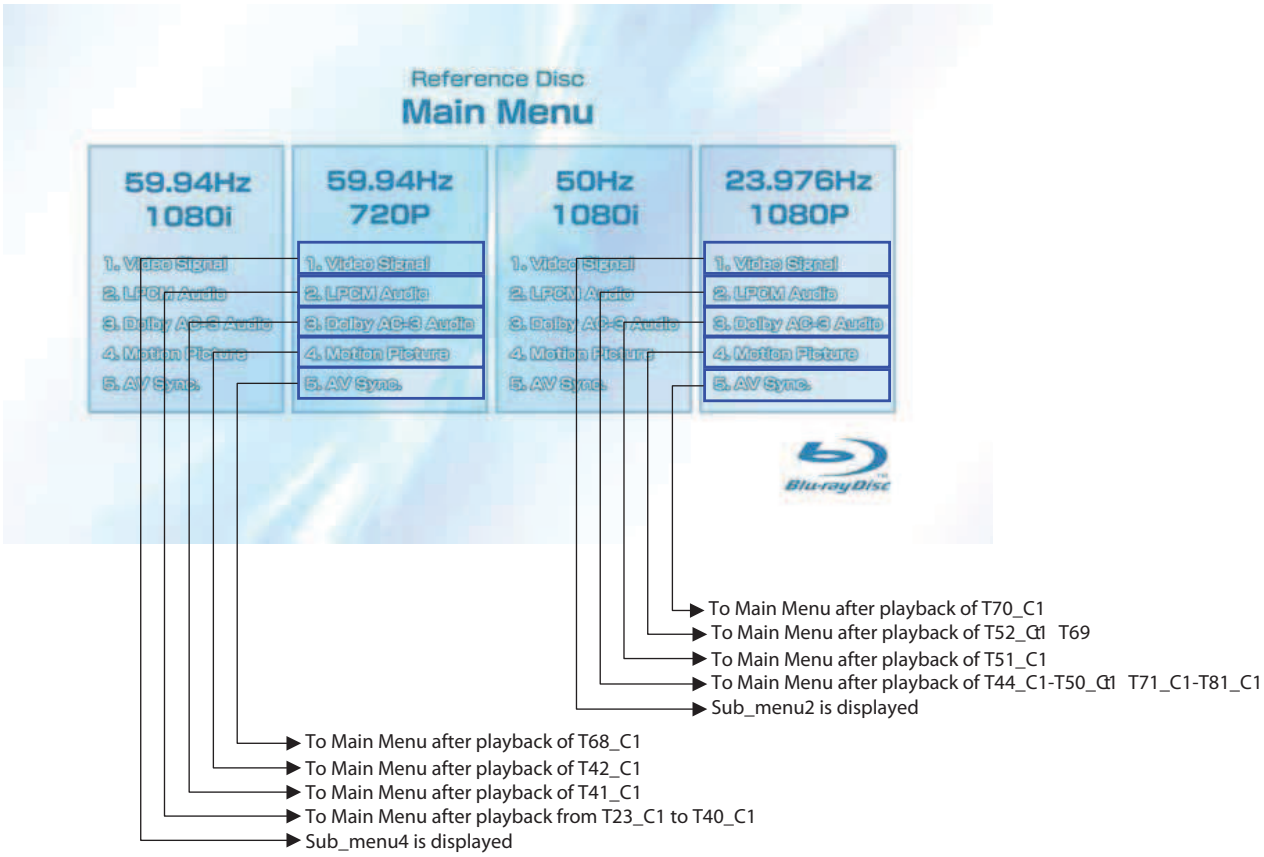
* When returning to Main Menu after playback from each button of 59.94Hz/1080i, 1. Video Signal of 59.94Hz/1080i is selectively displayed.

* When returning to Main Menu after playback from each button of 50Hz/1080i, 1. Video Signal of 50Hz/1080i is selectively displayed.

Note:

Txx_ Cxx
- Chapter No.
- Title No.

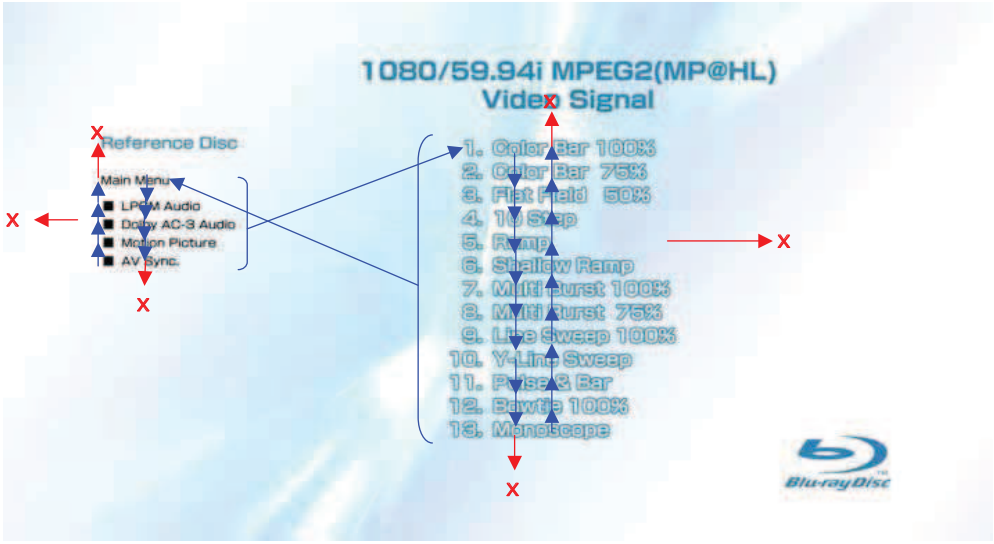
1-3-2-3. BLX-204 Menu Function (3)
Main Menu


Reference Disc
Main Menu
59.94Hz 1080i
59.94Hz 720P
50Hz 1080i
23.976Hz 1080P
1. Video Signal
2. LPCM Audio
3. Dolby AC-3 Audio
4. Motion Picture
5. AV Sync.
Blu-ray Disc
To Main Menu after playback of T70_C1
To Main Menu after playback of T52_C1 T69
To Main Menu after playback of T51_C1
To Main Menu after playback of T44_C1-T50_C1 T71_C1-T81_C1
Sub_menu2 is displayed
To Main Menu after playback of T68_C1
To Main Menu after playback of T42_C1
To Main Menu after playback of T41_C1
To Main Menu after playback from T23_C1 to T40_C1
Sub_menu4 is displayed

* When returning to Main Menu after playback from each button of 59.94Hz/720P, 1. Video Signal of 59.94Hz/720P is selectively displayed.

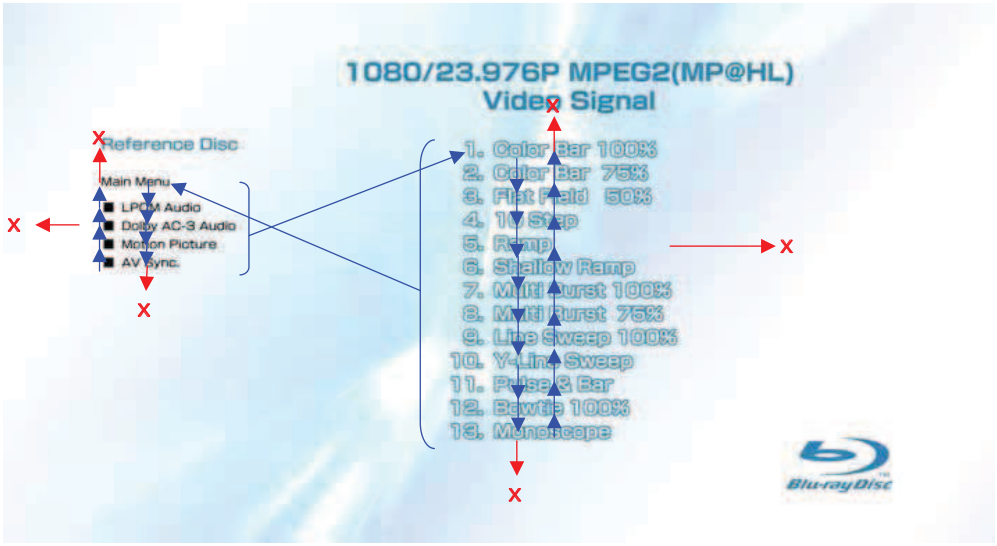
* When returning to Main Menu after playback from each button of 23.976Hz/1080P, 1. Video Signal of 23.976Hz/1080P is selectively displayed.

1-3-2-4. BLX-204 Menu Function (4)
Sub menu 1



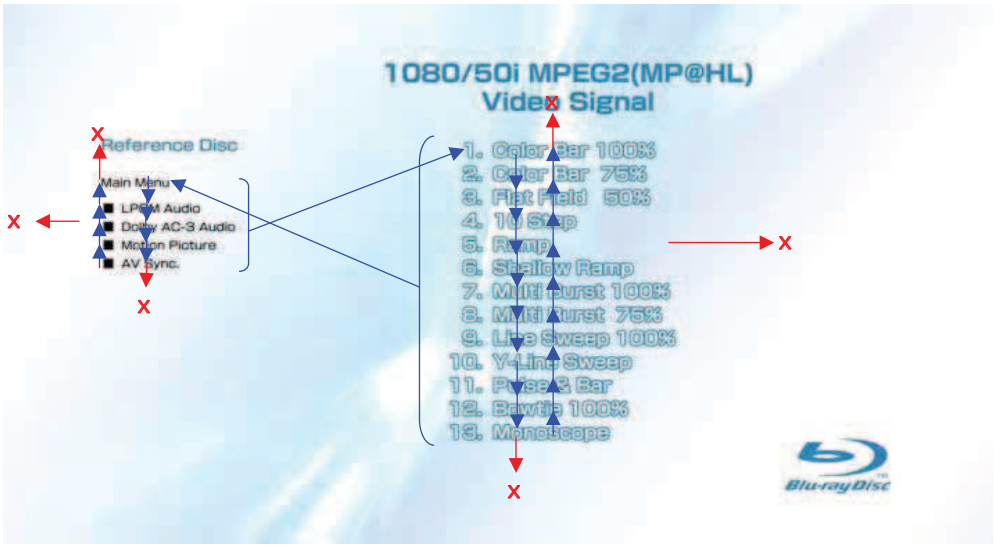
1) At the display of Sub menu1, 1. Color Bar 100% is selectively displayed.
2) Selection of 1. Color Bar 100% t Return to Sub menu1 after seamless playback from T1_C1 to T1_C13. 1. Color Bar 100% is selectively displayed on Sub menu1 screen.
3) Selection of 2. Color Bar 75% t Return to Sub menu1 after seamless playback from T1_C2 to T1_C13. 1. Color Bar 100% is selectively displayed on Sub menu1 screen.
4) At the selection of 3 - 13, item 3 mentioned above is executed as the routine.
5) At the display of Sub menu1, Main Menu is selected t Jump to Main Menu. At the display of Main Menu, 1. Video Signal of 59.94Hz/1080i is selectively displayed.
6) Selection of LPCM Audio t Playback from T2_C1 to T19_C1. SubPic that corresponds to Audio stream 1 is forcibly displayed. During the playback, when audio channel changes, the caption that corresponds to each audio stream is forcibly displayed. Return to Sub menu1 after playback. 1. Color Bar 100% is selectively displayed on Sub menu1 screen.
7) Selection of Dolby AC-3 Audio t Playback of T20_C1. SubPic that corresponds to Audio stream 1 is forcibly displayed. During the playback, when audio channel changes, the caption that corresponds to each audio stream is forcibly displayed. Return to Sub menu1 after playback. 1. Color Bar 100% is selectively displayed on Sub menu1 screen.
8) Selection of Motion Picture t Return to Sub menu1 after playback of T21_C1. 1. Color Bar 100% is selectively displayed on Sub menu1 screen.
9) Selection of AV Sync t Return to Sub menu1 after playback of T67_C1. 1. Color Bar 100% is selectively displayed on Sub menu1 screen.
10) At the selection of Main Menu, 1. Video Signal of 1080/59.94i of Main Menu is selectively displayed.

1-3-2-5. BLX-204 Menu Function (5)
Sub menu 2



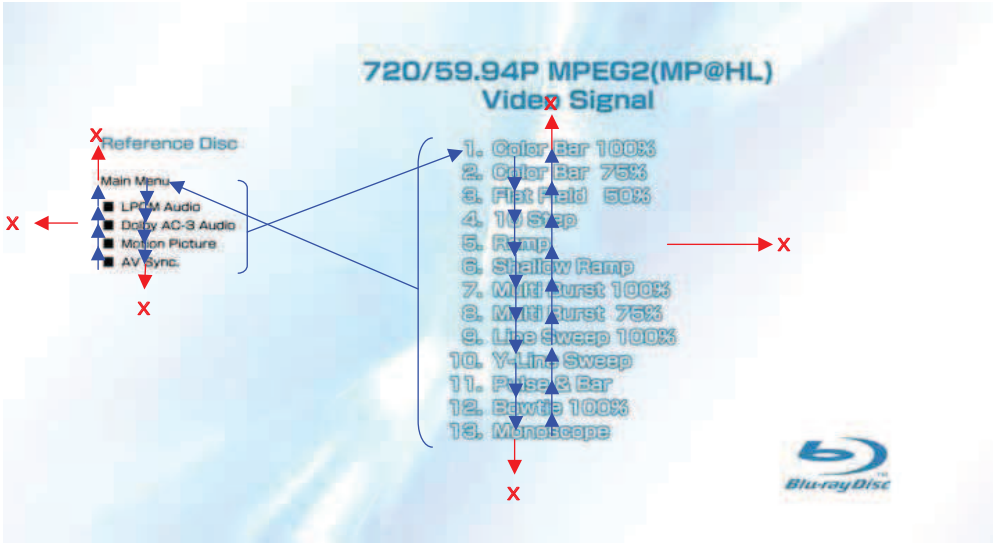
1) At the display of Sub menu2, 1. Color Bar 100% is selectively displayed.
2) Selection of 1. Color Bar 100% t Return to Sub menu2 after seamless playback from T43_C1 to T43_C13. 1. Color Bar 100% is selectively displayed on Sub menu2 screen.
3) Selection of 2. Color Bar 75% t Return to Sub menu2 after seamless playback from T43_C2 to T43_C13. 1. Color Bar 100% is selectively displayed on Sub menu2 screen.
4) At the selection of 3 - 13, item 3 mentioned above is executed as the routine.
5) At the display of Sub menu2, Main Menu is selected t Jump to Main Menu. At the display of Main Menu, 1. Video Signal of 23.976Hz/1080P is selectively displayed.
6) Selection of LPCM Audio t Playback from T44_C1 to T50_C1 and from T71_C1 to T81_C1. SubPic that corresponds to Audio stream 1 is forcibly displayed.
   During the playback, when audio channel changes, the caption that corresponds to each audio stream is forcibly displayed. Return to Sub menu2 after playback. 1. Color Bar 100% is selectively displayed on Sub menu2 screen.
7) Selection of Dolby AC-3 Audio t Playback of T51_C1. SubPic that corresponds to Audio stream 1 is forcibly displayed.
   During the playback, when audio channel changes, the caption that corresponds to each audio stream is forcibly displayed. Return to Sub menu2 after playback. 1. Color Bar 100% is selectively displayed on Sub menu2 screen.
8) Selection of Motion Picture t Return to Sub menu2 after playback of T52_C1 and T69. 1. Color Bar 100% is selectively displayed on Sub menu2 screen.
9) Selection of AV Sync t Return to Sub menu2 after playback of T70_C1. 1. Color Bar 100% is selectively displayed on Sub menu2 screen.
10) At the selection of Main Menu, 1. Video Signal of 1080/23.976P of Main Menu is selectively displayed.

1-3-2-6. BLX-204 Menu Function (6)
Sub menu 3



1) At the display of Sub menu3, 1. Color Bar 100% is selectively displayed.
2) Selection of 1. Color Bar 100% t Return to Sub menu3 after seamless playback from T53_C1 to T53_C13. 1. Color Bar 100% is selectively displayed on Sub menu3 screen.
3) Selection of 2. Color Bar 75% t Return to Sub menu3 after seamless playback from T53_C2 to T53_C13. 1. Color Bar 100% is selectively displayed on Sub menu3 screen.
4) At the selection of 3 - 13, item 3 mentioned above is executed as the routine.
5) At the display of Sub menu3, Main Menu is selected t Jump to Main Menu. At the display of Main Menu, 1. Video Signal of 50Hz/1080i is selectively displayed.
6) Selection of LPCM Audio t Playback from T54_C1 to T60_C1 and from T84_C1 to T94_C1. SubPic that corresponds to Audio stream 1 is forcibly displayed.
   During the playback, when audio channel changes, the caption that corresponds to each audio stream is forcibly displayed. Return to Sub menu3 after playback. 1. Color Bar 100% is selectively displayed on Sub menu3 screen.
7) Selection of Dolby AC-3 Audio t Playback of T61_C1. SubPic that corresponds to Audio stream 1 is forcibly displayed.
   During the playback, when audio channel changes, the caption that corresponds to each audio stream is forcibly displayed. Return to Sub menu3 after playback. 1. Color Bar 100% is selectively displayed on Sub menu3 screen.
8) Selection of Motion Picture t Return to Sub menu3 after playback of T62_C1 and T82. 1. Color Bar 100% is selectively displayed on Sub menu3 screen.
9) Selection of AV Sync t Return to Sub menu3 after playback of T83_C1. 1. Color Bar 100% is selectively displayed on Sub menu3 screen.
10) At the selection of Main Menu, 1. Video Signal of 1080/50i of Main Menu is selectively displayed.

1-3-2-7. BLX-204 Menu Function (7)
Sub menu 4



1) At the display of Sub menu4, 1. Color Bar 100% is selectively displayed.
2) Selection of 1. Color Bar 100% t Return to Sub menu4 after seamless playback from T22_C1 to T22_C13. 1. Color Bar 100% is selectively displayed on Sub menu4 screen.
3) Selection of 2. Color Bar 75% t Return to Sub menu4 after seamless playback from T22_C2 to T22_C13. 1. Color Bar 100% is selectively displayed on Sub menu4 screen.
4) At the selection of 3 - 13, item 3 mentioned above is executed as the routine.
5) At the display of Sub menu4, Main Menu is selected t Jump to Main Menu. At the display of Main Menu, 1. Video Signal of 59.94Hz/720P is selectively displayed.
6) Selection of LPCM Audio t Playback from T44_C1 to T50_C1. SubPic that corresponds to Audio stream 1 is forcibly displayed. During the playback, when audio channel changes, the caption that corresponds to each audio stream is forcibly displayed. Return to Sub menu4 after playback. 1. Color Bar 100% is selectively displayed on Sub menu4 screen.
7) Selection of Dolby AC-3 Audio t Playback of T51_C1. SubPic that corresponds to Audio stream 1 is forcibly displayed. During the playback, when audio channel changes, the caption that corresponds to each audio stream is forcibly displayed. Return to Sub menu4 after playback. 1. Color Bar 100% is selectively displayed on Sub menu4 screen.
8) Selection of Motion Picture t Return to Sub menu4 after playback of T52_C1. 1. Color Bar 100% is selectively displayed on Sub menu4 screen.
9) Selection of AV Sync t Return to Sub menu4 after playback of T68_C1. 1. Color Bar 100% is selectively displayed on Sub menu4 screen.
10) At the selection of Main Menu, 1. Video Signal of 720/59.94P of Main Menu is selectively displayed.

1-4. DRIVE REPAIRING

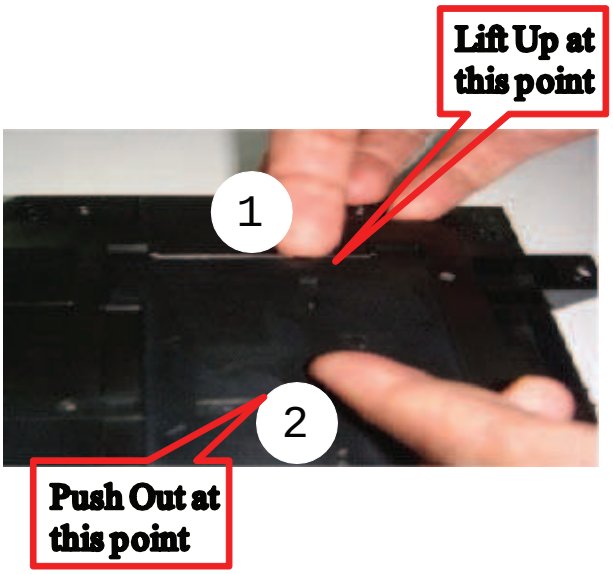
1-4-1. Preparation

- ESD Measures

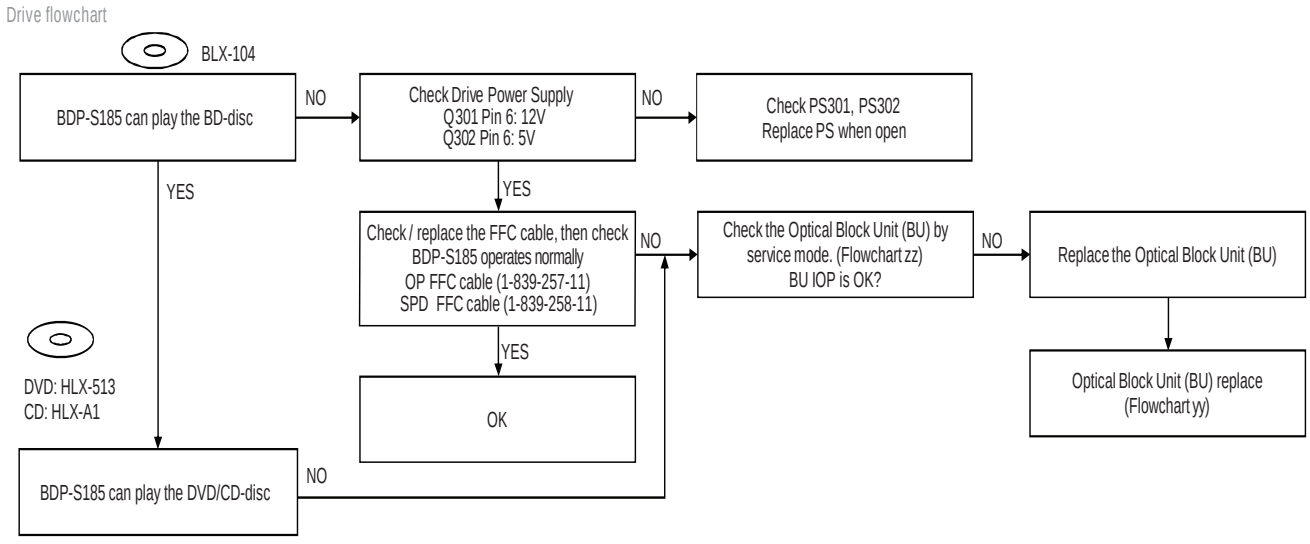
  It is necessary to check the working space ESD condition before starting the Drive Part (BU) repairs

  The ESD-resistance of BD Laser is weaker than DVD/CD Laser To prevent ESD destruction, please make sure the working space and human ESD.

- How to open FFC Holder. Refer below picture.



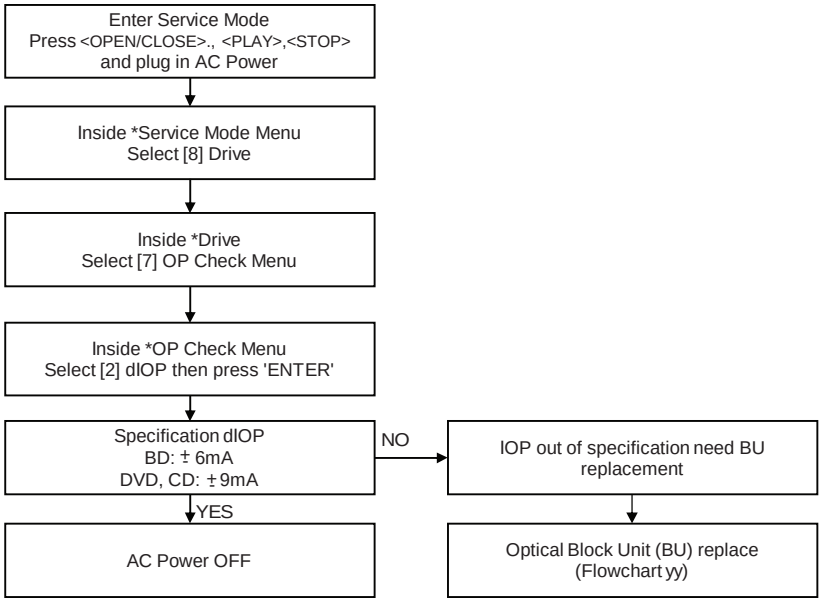
1-4-2. Checking Flow ~ Drive (BU) section ~



1-4-3. BU Check Flow [zz] ~

Before BU Replacement

Optical Block Unit (BU) IOP check flow (zz) ~ [Before BU Replacement]



1-4-4. BU (Optical Block) Repair Guide

BDP 6.9G (BDP-S185) series component structure is as same as conventional DVD Players. However BD player requires precise read out functions and also secure contents Protection system.
Since above requirement, it is necessary to set/adjust BU data to EEPROM.

The following cases need Adjustments;

(1)Replace BU (MB is original)
(2)Replace MB (BU is original)
(3)Replace both BU and MB

•JIG Requirement

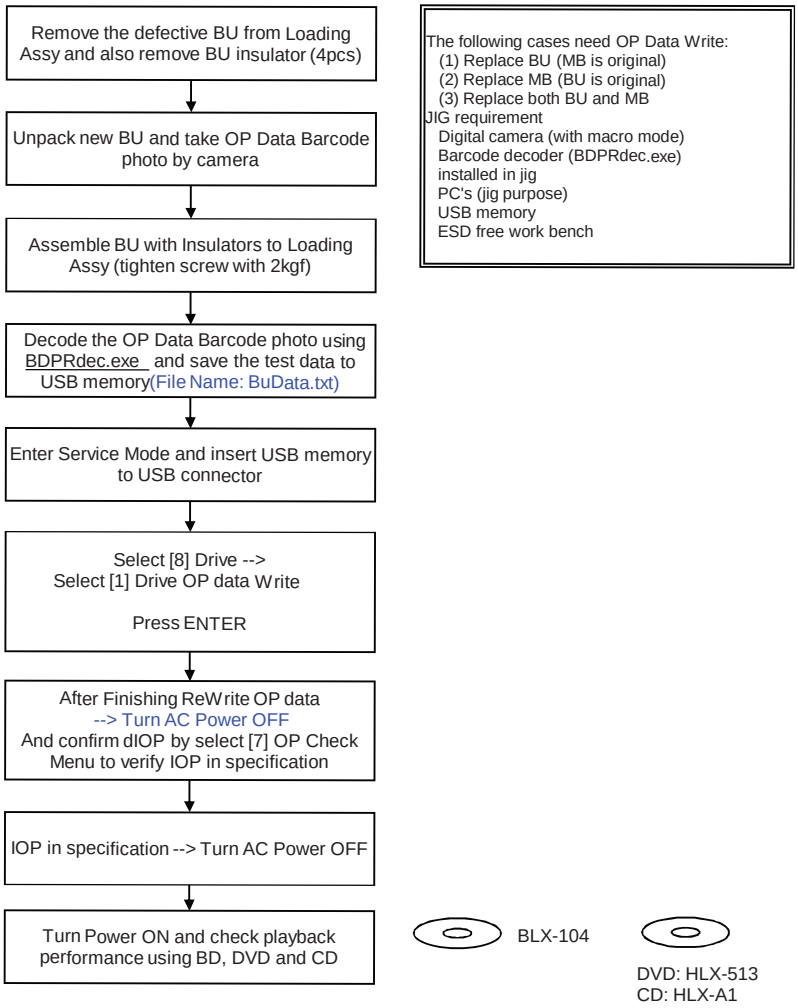
Digital camera (recommend with macro mode)
Barcode decoder (BDPRdec_ver2.0) installed in JIG PC's
USB memory
ESD work bench

•Procedure (all cases) →Refer the diagram

Remarks:
The servo adjustment procedure will be carried out during OP data Writing.
There is no manual adjustment procedure. LD ON TIME history doesn't carry over.
Do not touch any optical block parts, Turn Table and during replacing. BD Laser diode is very sensitive!

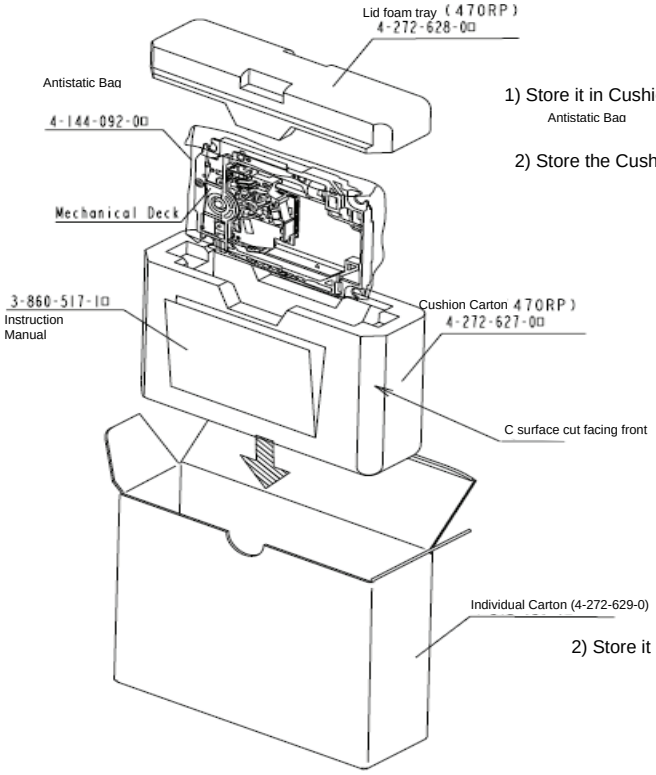
1-4-5. BU Adjustment Flow [yy] ~

Optical Block Unit (BU) OP Data Write Flow (yy) ~ [After BU/MB Replacement]


Remove the defective BU from Loading Assy and also remove BU insulator (4pcs)
Unpack new BU and take OP Data Barcode photo by camera
Assemble BU with Insulators to Loading Assy (tighten screw with 2kgf)
Decode the OP Data Barcode photo using BDPRdec.exe and save the test data to USB memory(File Name: BuData.txt)
Enter Service Mode and insert USB memory to USB connector
Select [8] Drive --> Select [1] Drive OP data Write
Press ENTER
After Finishing ReWrite OP data --> Turn AC Power OFF And confirm dIOP by select [7] OP Check Menu to verify IOP in specification
IOP in specification --> Turn AC Power OFF
Turn Power ON and check playback performance using BD, DVD and CD
The following cases need OP Data Write:
(1) Replace BU (MB is original)
(2) Replace MB (BU is original)
(3) Replace both BU and MB
JIG requirement
Digital camera (with macro mode)
Barcode decoder (BDPRdec.exe) installed in jig
PC's (jig purpose)
USB memory
ESD free work bench
BLX-104
DVD: HLX-513
CD: HLX-A1

1-4-6. KEM-470AAA/C2RP Packing Spec.

1-4-7. KEM-470AAA/C2RP Packing

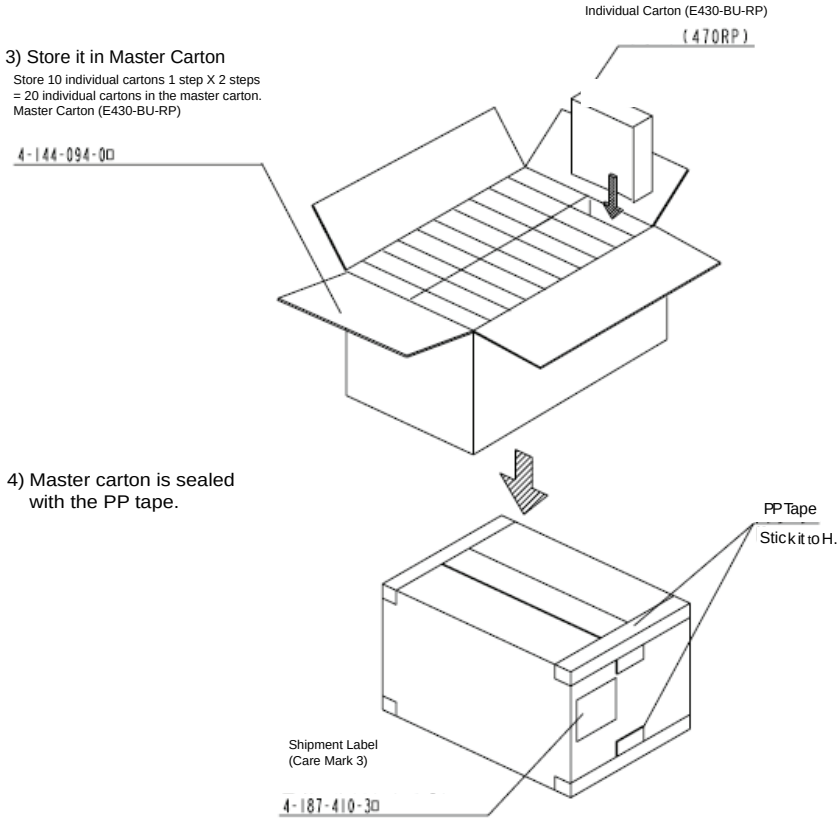


1) Store it in Cushion Carton

Antistatic Bag

2) Store the Cushion carton in the individual carton

2) Store it in Individual Carton

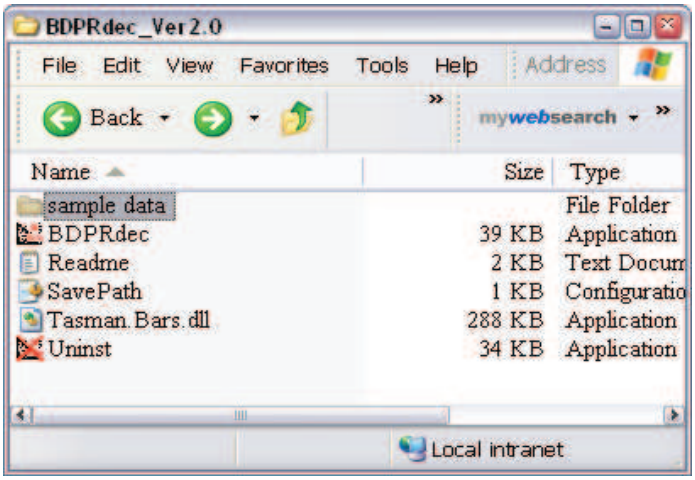


3) Store it in Master Carton

Store 10 individual cartons 1 step X 2 steps
= 20 individual cartons in the master carton.
Master Carton (E430-BU-RP)

4) Master carton is sealed with the PP tape.

1-4-8. BU Data Decode Jig



・JIG Name: BDPRdec. exe
・Release : 2010.11.26
・Version : 2.0.0.0

・Software Contents:
BDPRdec.exe ; Software
SavePath.ini ; decoded file destination setting file (initial destination is C:¥BuData.txt)
Tasman.Bars.dll ; decode dll
Uninst.exe ; unistall BDPRd ec.exe from PC

・Installations
1.Unzip files to any PC Folder
2.Check the attached 2D code photo(OK_sample.JPG) drag-and-drop onto BDPRdec.exe, the Password will be required at first time only, no need P/W from second time.
3.If there is the error message (.NET frame work requirements) please apply Microsoft .NET Framework 2.0 (or 2.0 SP1) from Microsoft download site.

STEP 1
Microsoft .NET Framework Version 2.0 Redistributable Package (x86)
http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=0856eacb-4362-4b0d-8edd-aab15c5e04f5

STEP 2
Microsoft .NET Framework 2.0 Service Pack 1 (x86)
http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=79bc3b77-e02c-4ad3-aacf-a7633f706ba5

*Hou to use
Case1
Drag-and-drop 2Dcode photo onto BDPRdec.exe

Case2
Drag-and-drop BU data file onto BDPRdec.exe
Data file name be changed to specify format and end of 7 character are defined
Player : ****BDP.txt
Recoder: ****BRD.txt

#You can also enter the file path at the prompt.

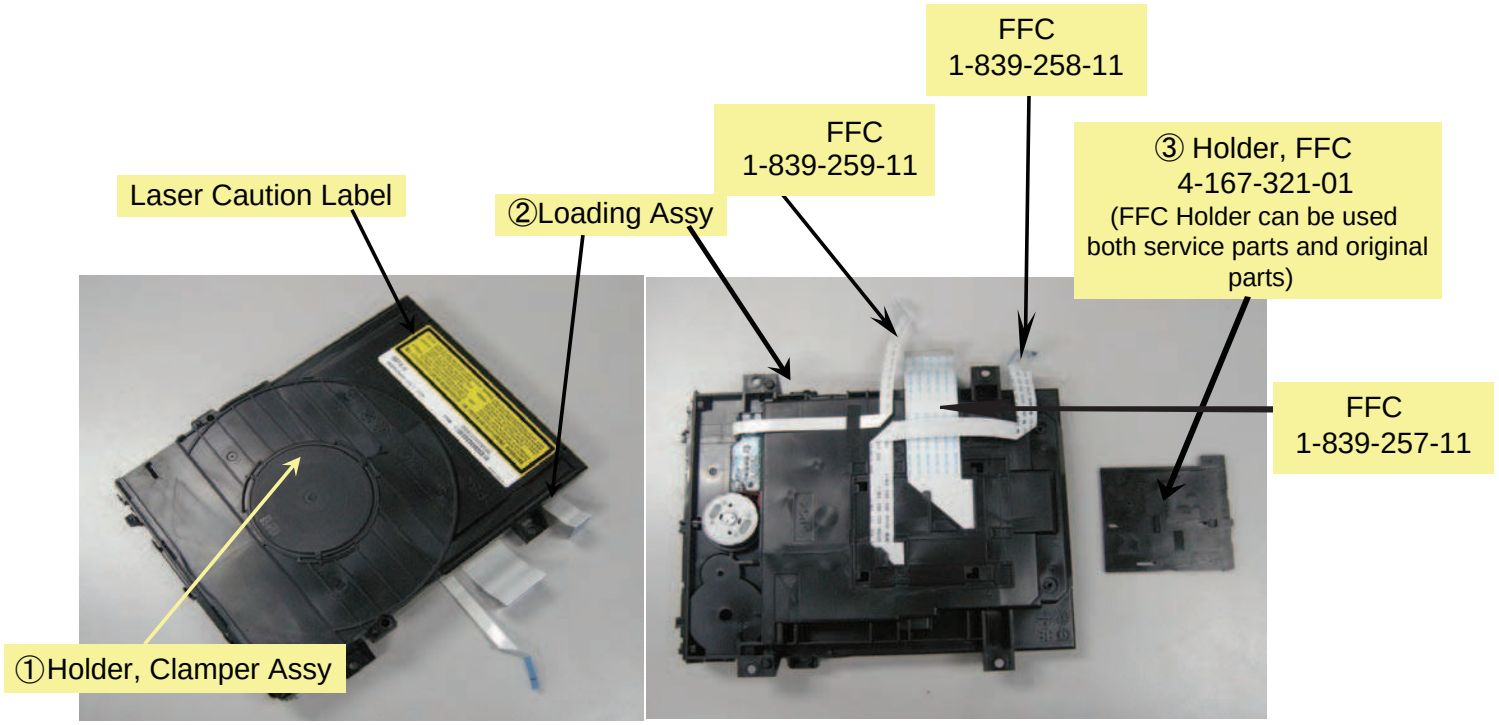
*Remarks
Do not change the decoded file name “BuData.txt”.

1-4-9. Loading For Service

BDP 6G Loading Ass'y service parts consists from 3 parts.

①Holder, Clamper Assy
②Loading Assy
③Holder FFC

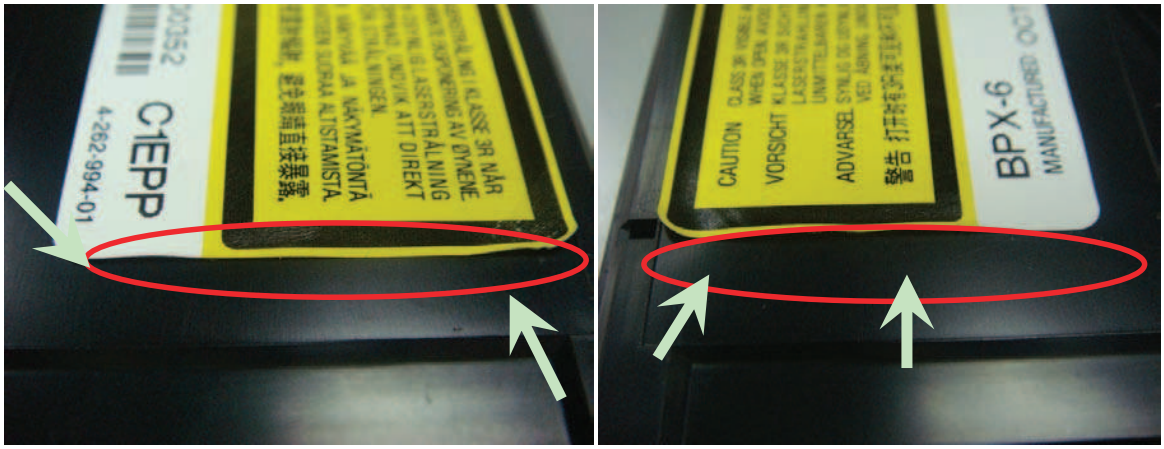
Currently these parts are producing 2 vendors. But the THERE IS NO COMPATIBILITY
So, please DO NOT MIX the ① and ② of Loading for service and original Loading.
"Loading for service" A-1750-926-A



1-4-10.Laser Caution Label

The Loading Ass'y service parts does not have Laser Caution Label.
So that please reuse the original Laser Caution label and paste it on top of new Loading Ass'y.

Limit Sample
Following peel off condition are acceptable



In case of BU assy replacement:

1. OP related data for new assy is controlled by BU factory
2. All of data is recorded into a barcode label
3. The label is put on the assy
4. Service parts will be followed
5. In service, the data should be read out from problem assy
6. The read data should be saved to new assy

Fact finding:

1. The label is “DATA MATRIX” format
2. The number of data is 91 words
3. The method of reading and saving is required when BU and main board are replaced.

New service method

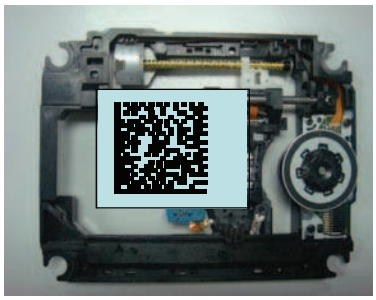
1. All of BU data on the barcode label is shot by digital camera in order to make a JPEG file of BU data.

2. Application software in the PC makes digital data from JPEG file.

3. The converted data is stored to USB memory.

4. The USB memory is connected to BDP 6G unit.

5. In service mode, there is a command to save the data from USB memory to board memory.



Save the TEXT data

USB device is connected to ⇐ symbol on the rear unit, and the TEXT data as new data is loaded to unit by service mode.

Shoot the barcode
Format is JPEG

Application Software
Data convert from
JPEG → TEXT

Description: BDPRdec.exe

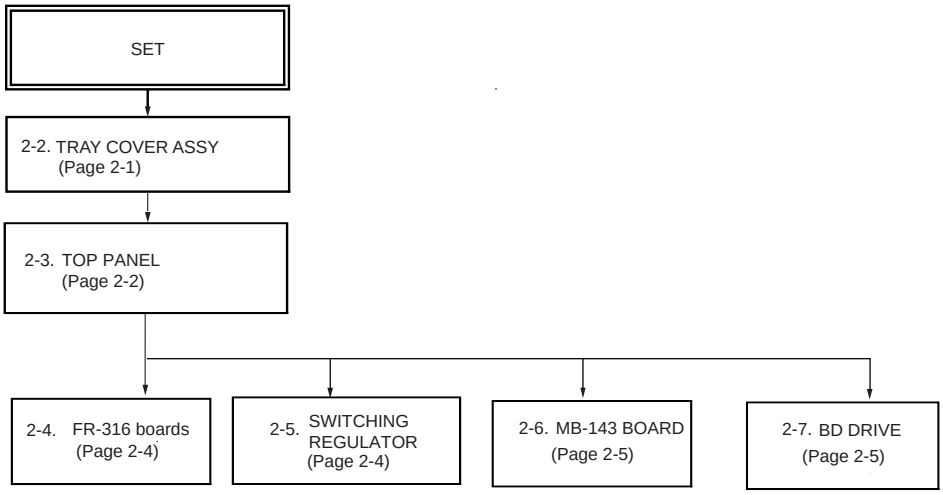
When instruction to PC, password is required.

The password will be supplied to only service HQ, and service center name, q'ty and all of software registered information should be maintained by service HQ, and Video will ask to report the registration information.

SECTION 2
DISASSEMBLY

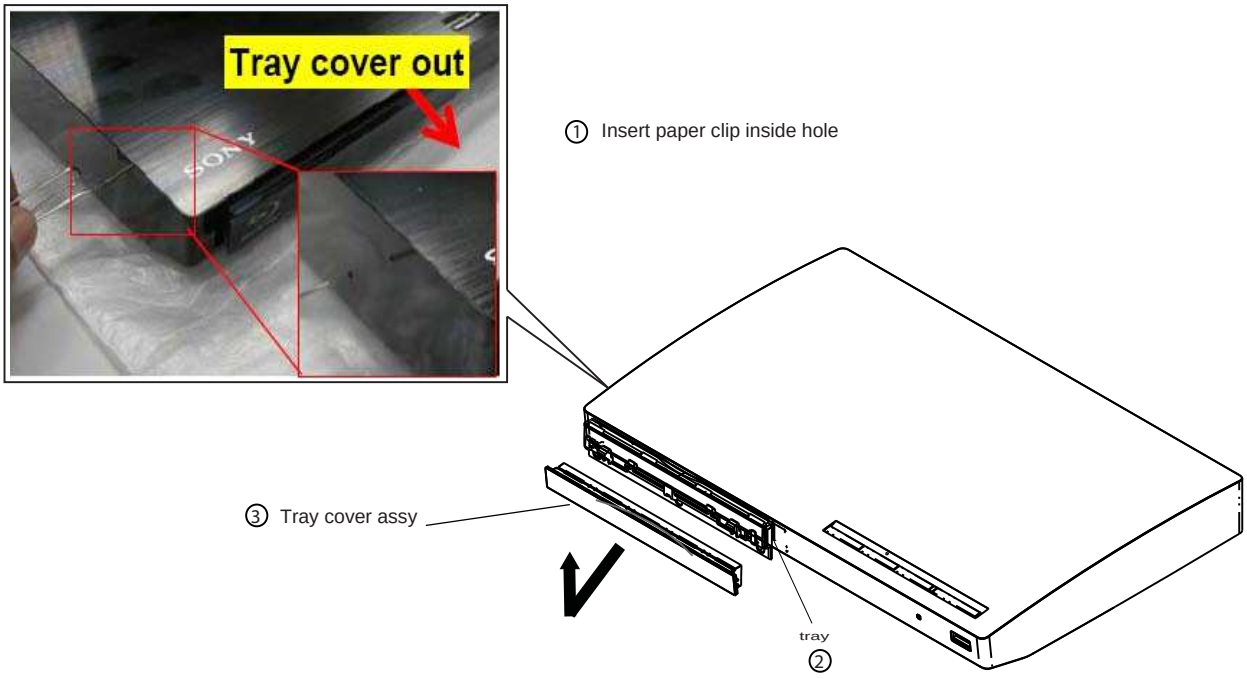
• This set can be disassembled in the order shown below.

2-1. DISASSEMBLY FLOW

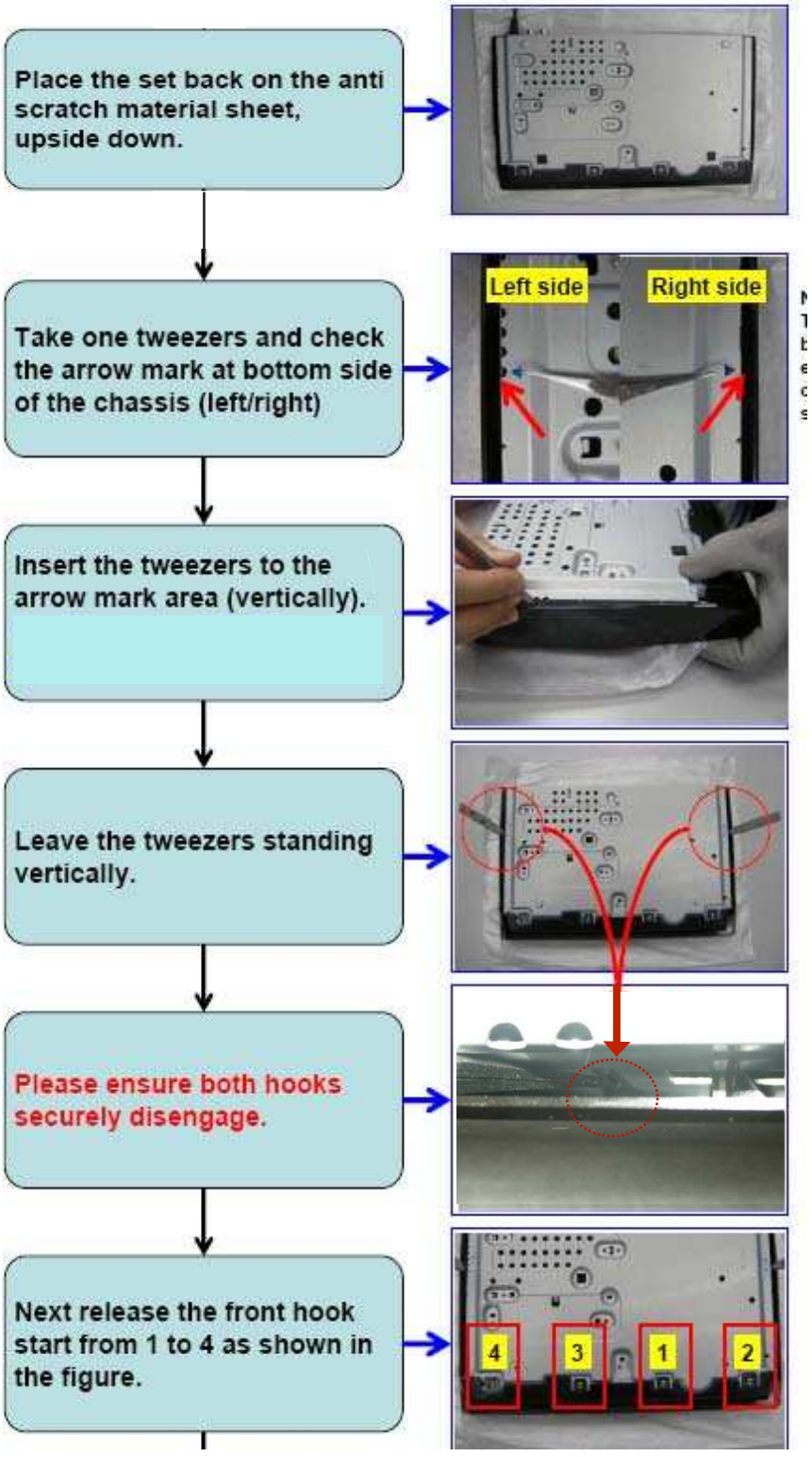


Note: Follow the disassembly procedure in the numerical order given.

2-2. TRAY COVER ASSY



2-3. TOP PANEL (1/2)


Place the set back on the anti scratch material sheet, upside down.
Take one tweezers and check the arrow mark at bottom side of the chassis (left/right)
Left side
Right side
Insert the tweezers to the arrow mark area (vertically).
Leave the tweezers standing vertically.
Please ensure both hooks securely disengage.
Next release the front hook start from 1 to 4 as shown in the figure.
4
3
1
2

(2/2)

2-3. TOP PANEL (2/2)

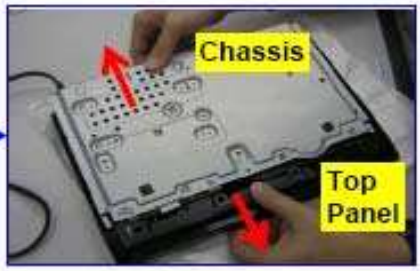
(1/2)

Please hold with one hands when you unlock the 2nd to 4th hooks. As shown.
(to avoid hooks to latch back)

Slowly pull the top panel out (arrow direction) about 10 to 15mm.

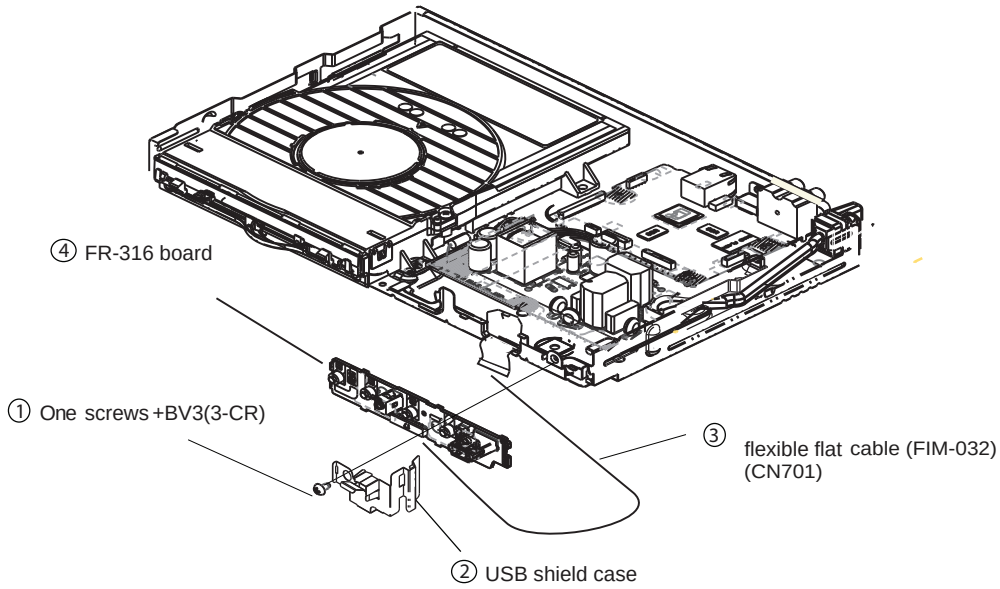
Remove both tweezers

Slide the top panel and chassis, in opposite direction

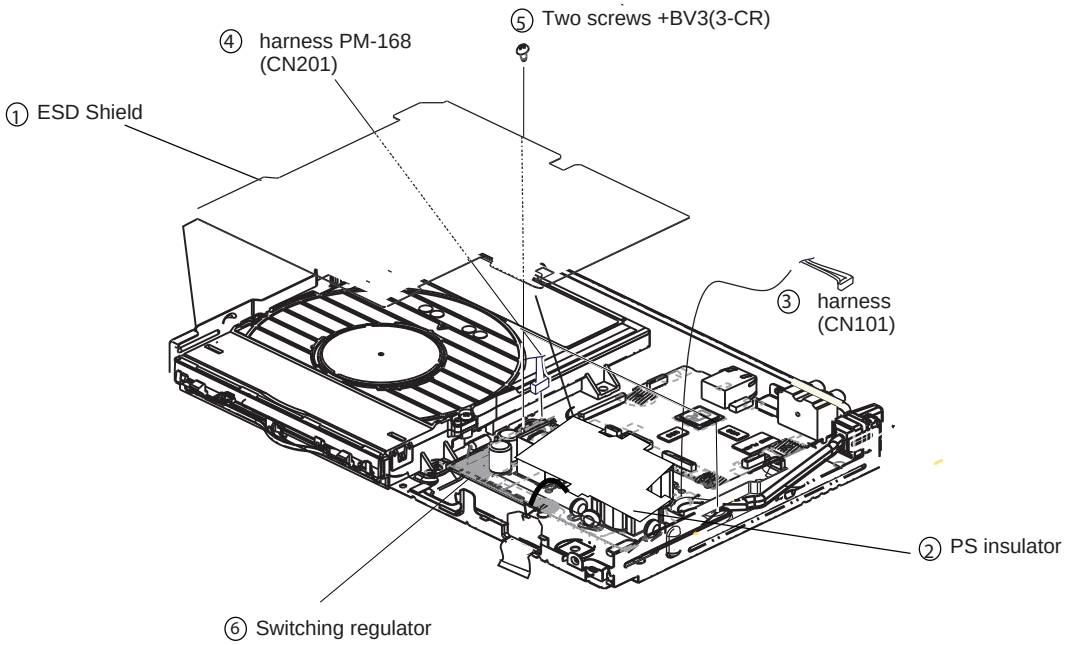


The set is open

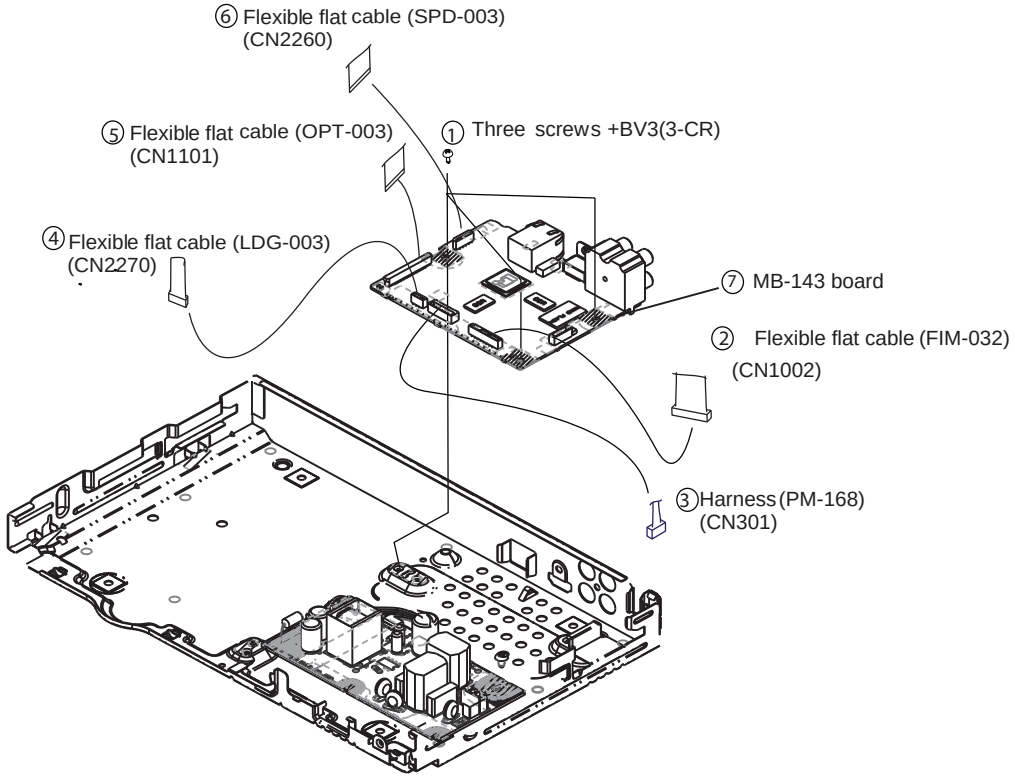
2-4. FR-316 BOARD



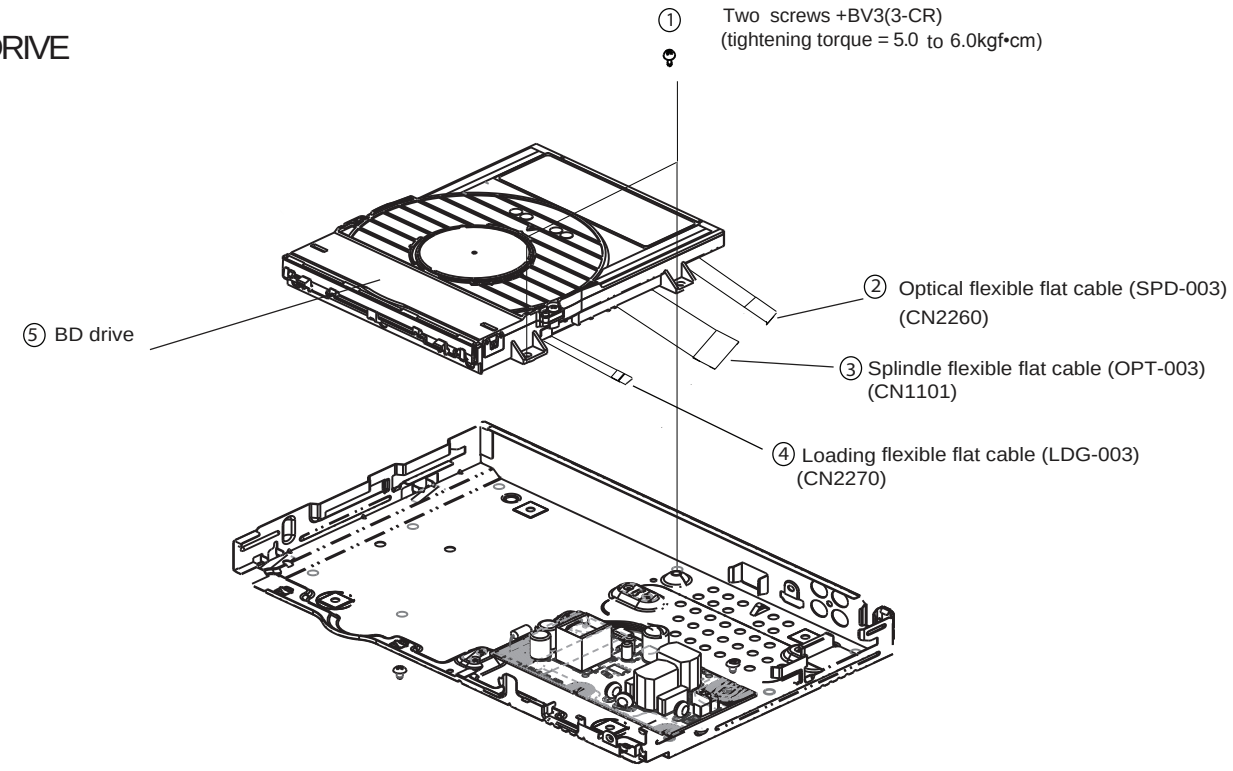
2-5. SWITCHING REGULATOR



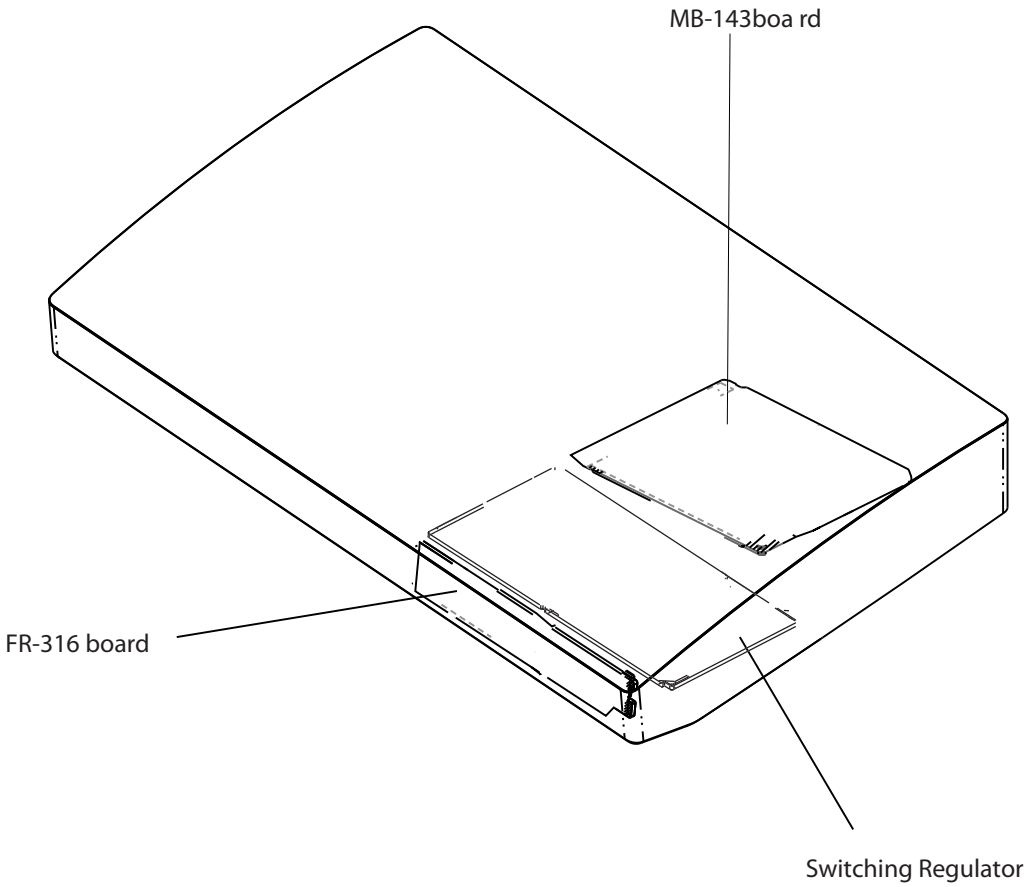
2-6. MB-143 BOARD



2-7. DRIVE

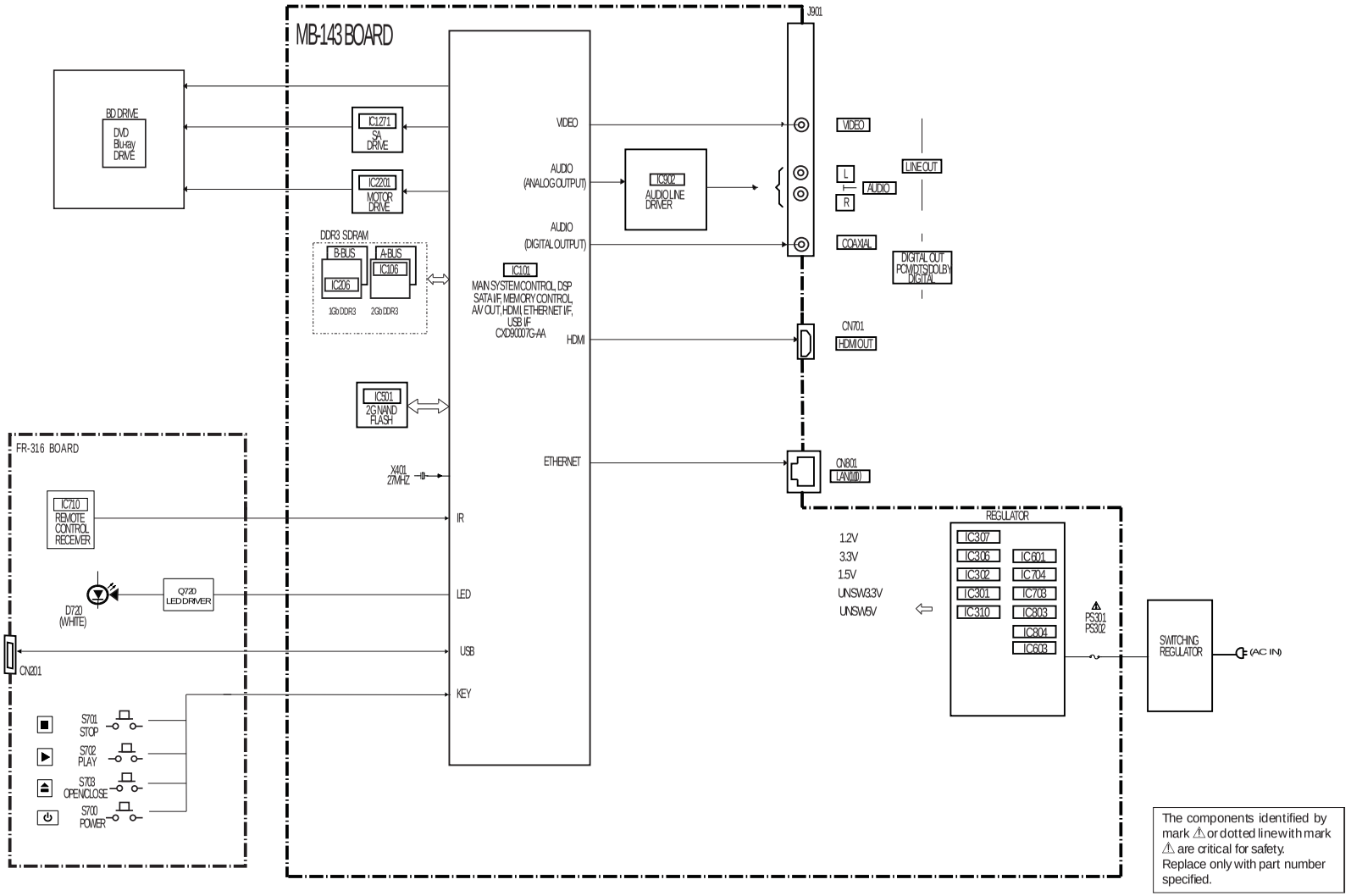


2-8. CIRCUIT BOARDS LOCATION

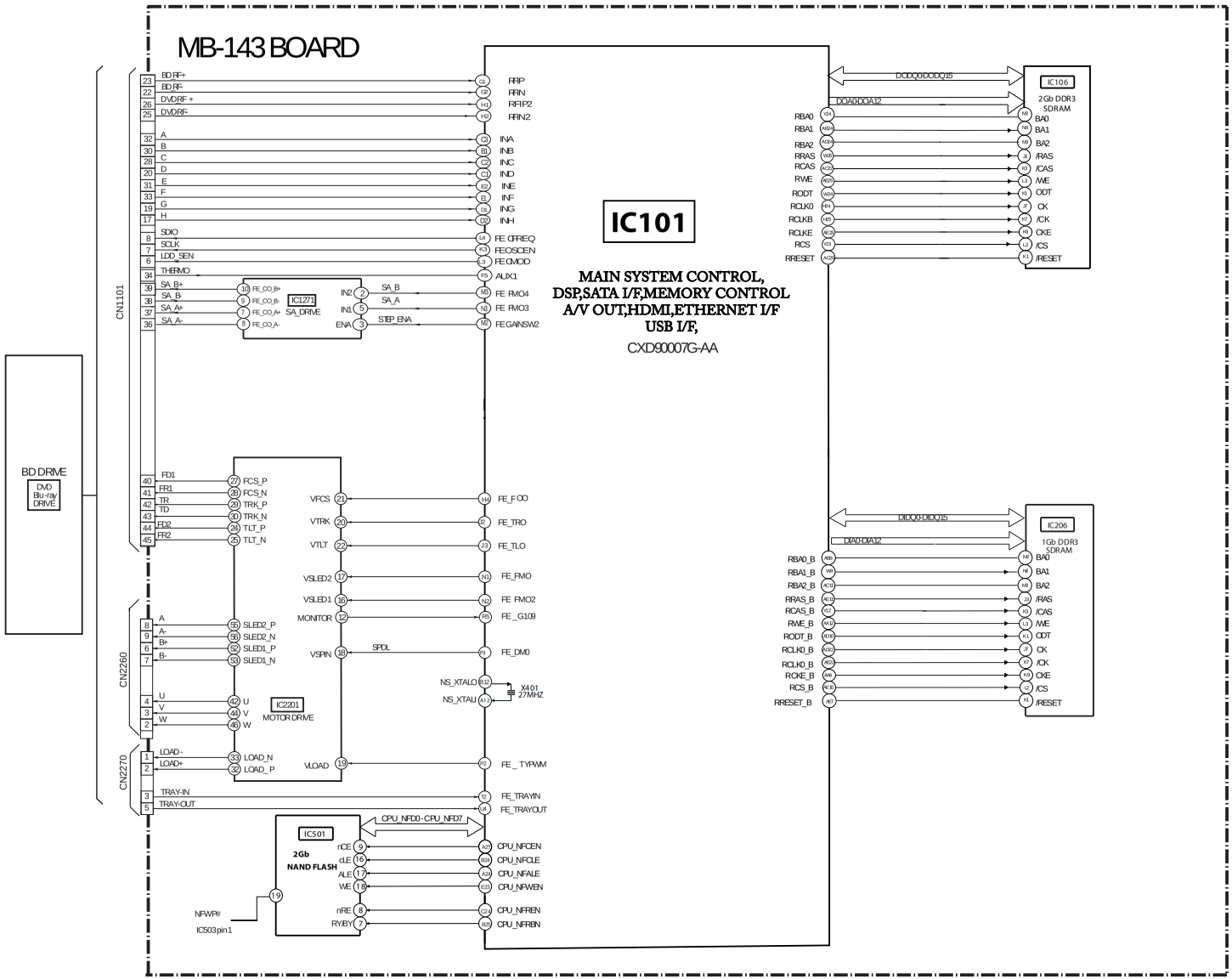


SECTION 3
BLOCK DIAGRAMS

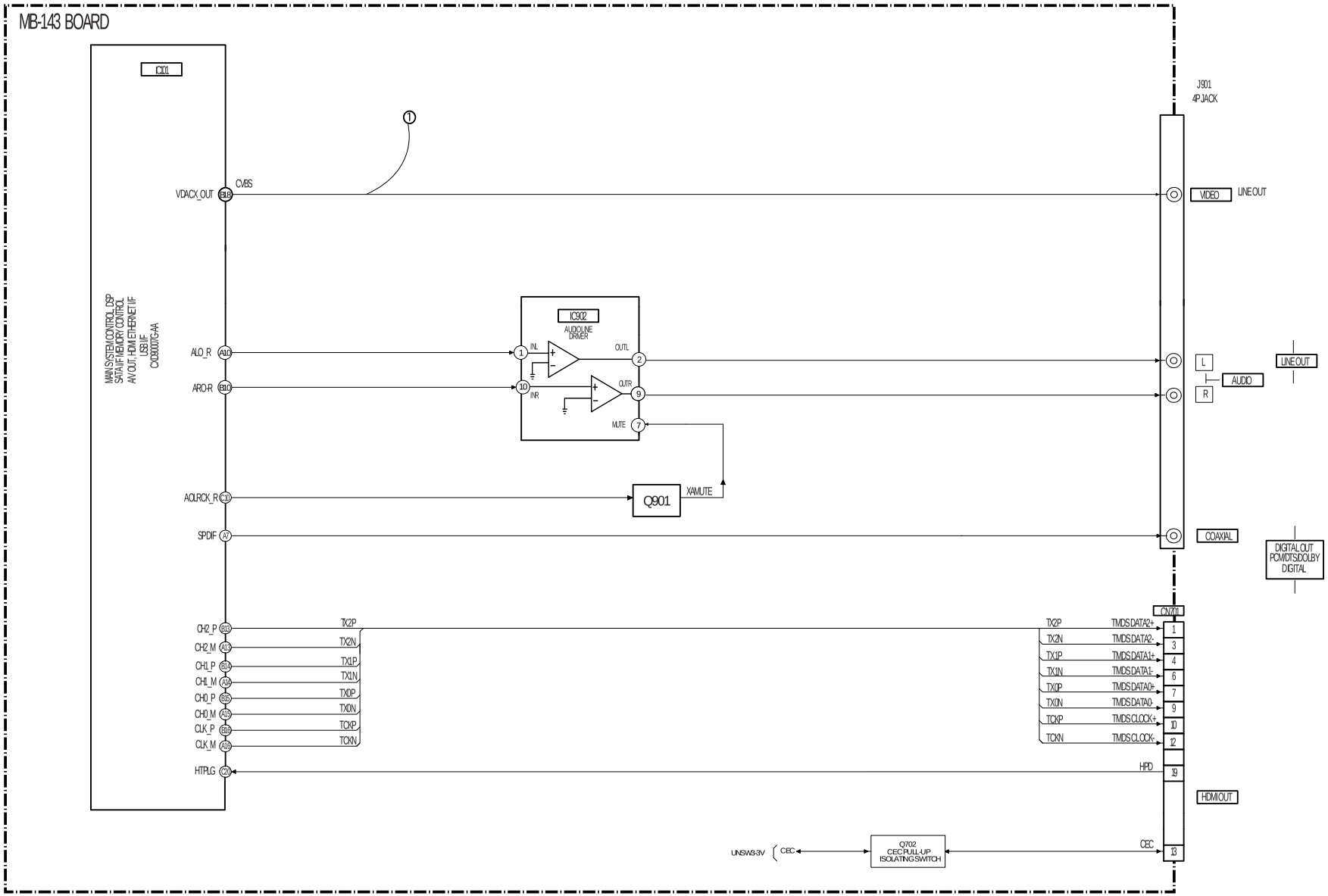
3-1. OVERALL BLOCK DIAGRAM



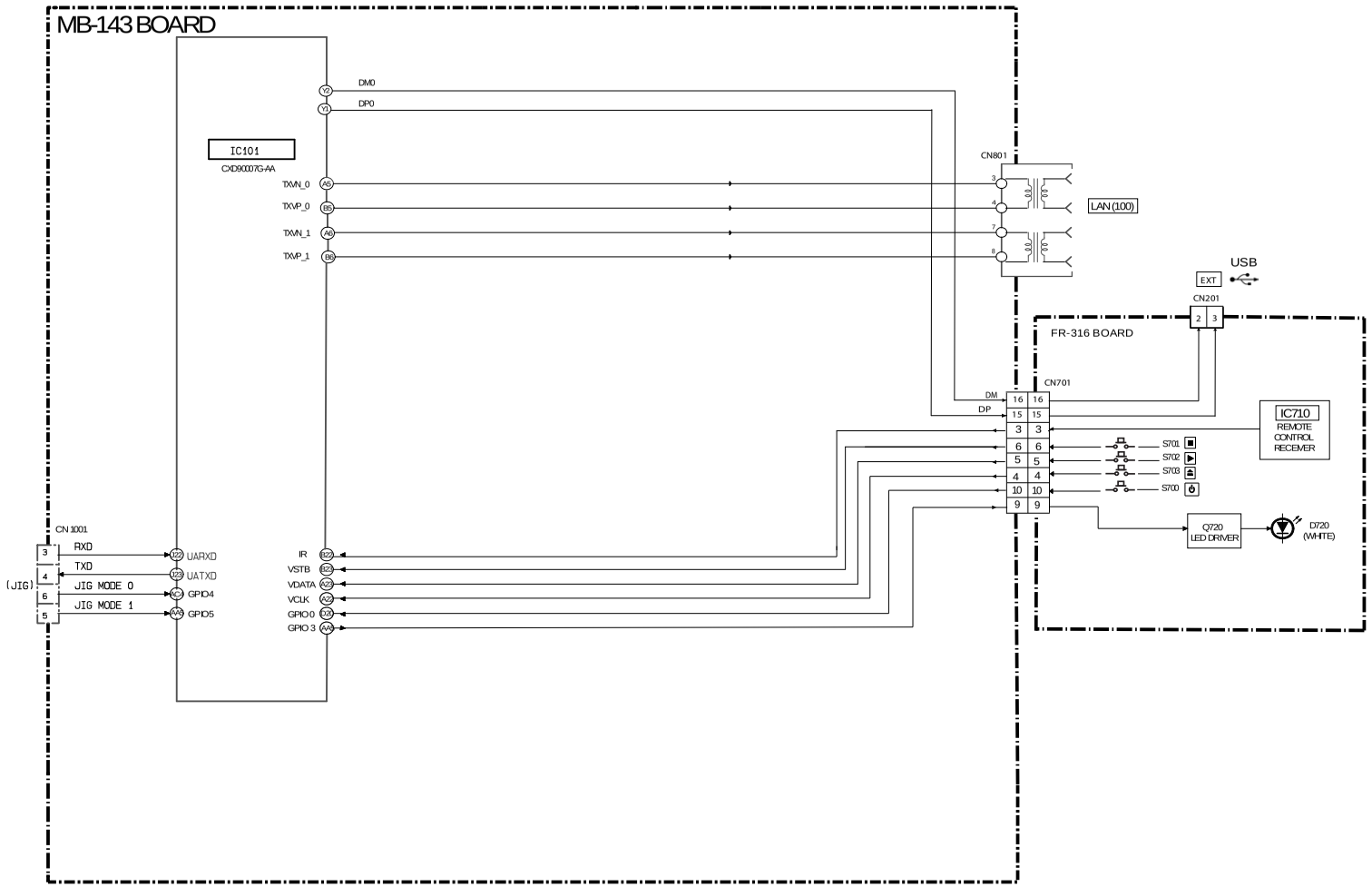
3-2. DSP BLOCK DIAGRAM



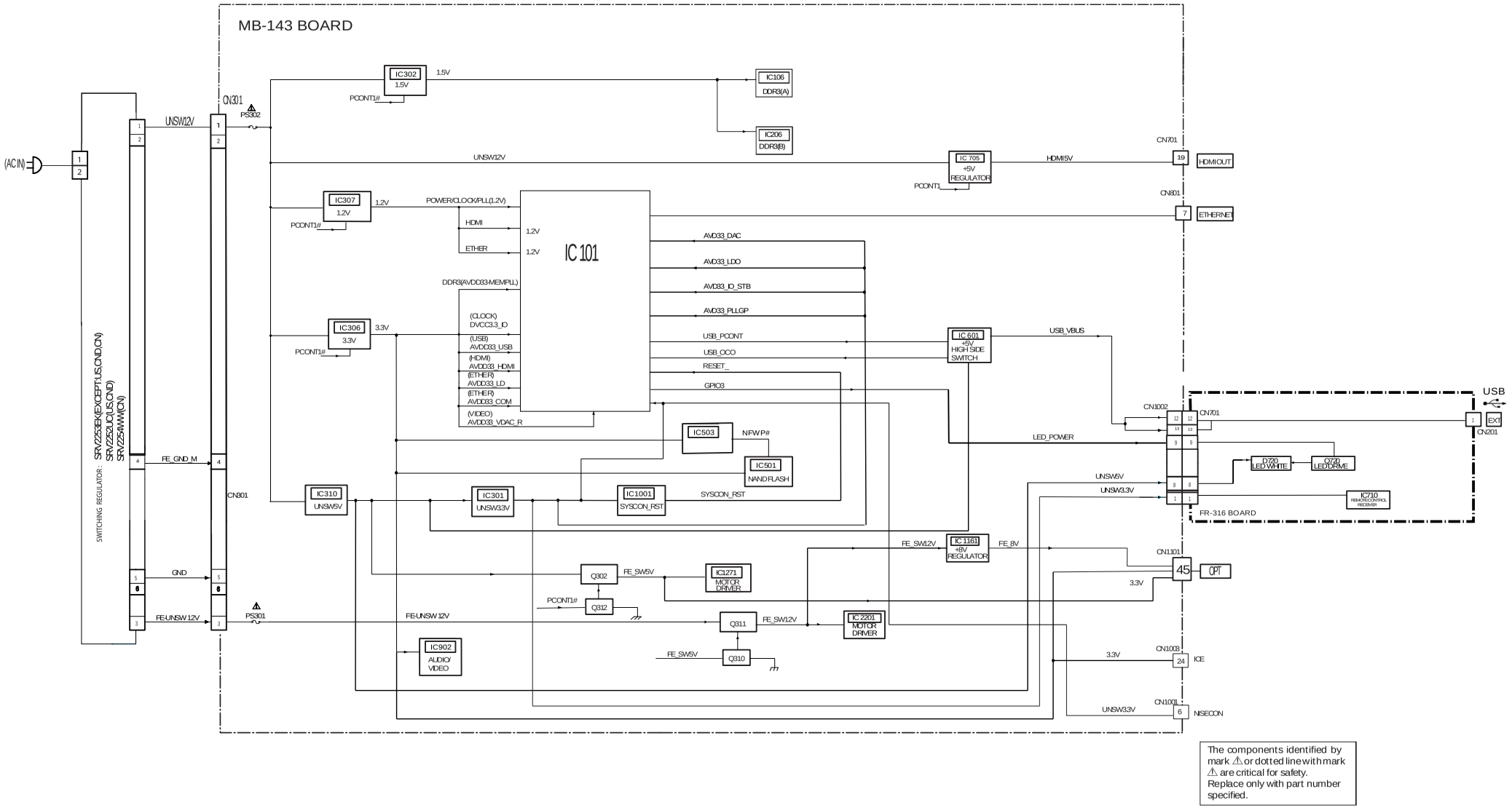
3-3. AV OUT BLOCK DIAGRAM



3-4. USB/ETHER BLOCK DIAGRAM



3-5. POWER BLOCK DIAGRAM



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

SECTION 4
SCHEMATIC DIAGRAMS

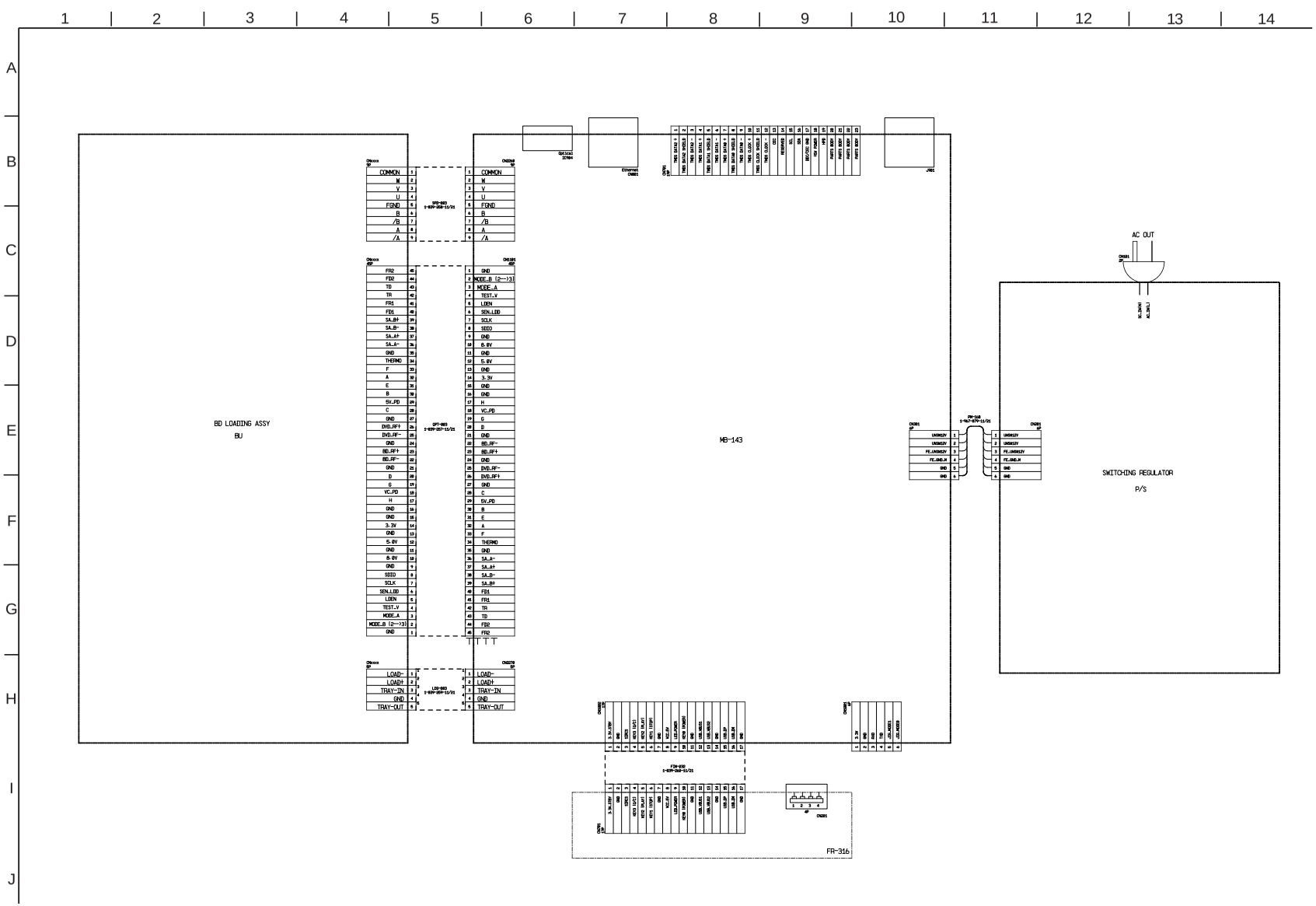
4-1. THIS NOTE IS COMMON FOR SCHEMATIC DIAGRAMS

- All capacitors are in μF unless otherwise noted. pF : μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4 W (Chip resistors : 1 /10 W) un-less otherwise specified.
  kΩ=1000Ω, MΩ=1000kΩ.
- % : indicates tolerance.
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used.
  In such cases, the unused circuits may be indicated.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : nonflammable resistor
- : fusible resistor
- : panel designation
- f : internal component.
- : adjustment for repair.
- : B+ Line
- : B– Line
- Circled numbers refer to waveforms.
- Voltages are dc between measurement point.
- Readings are taken with a color-bar signals on Blu-ray disc.
- Readings are taken with a digital multimeter (DC 10MΩ).
- Voltage variations may be noted due to normal production tolerances.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

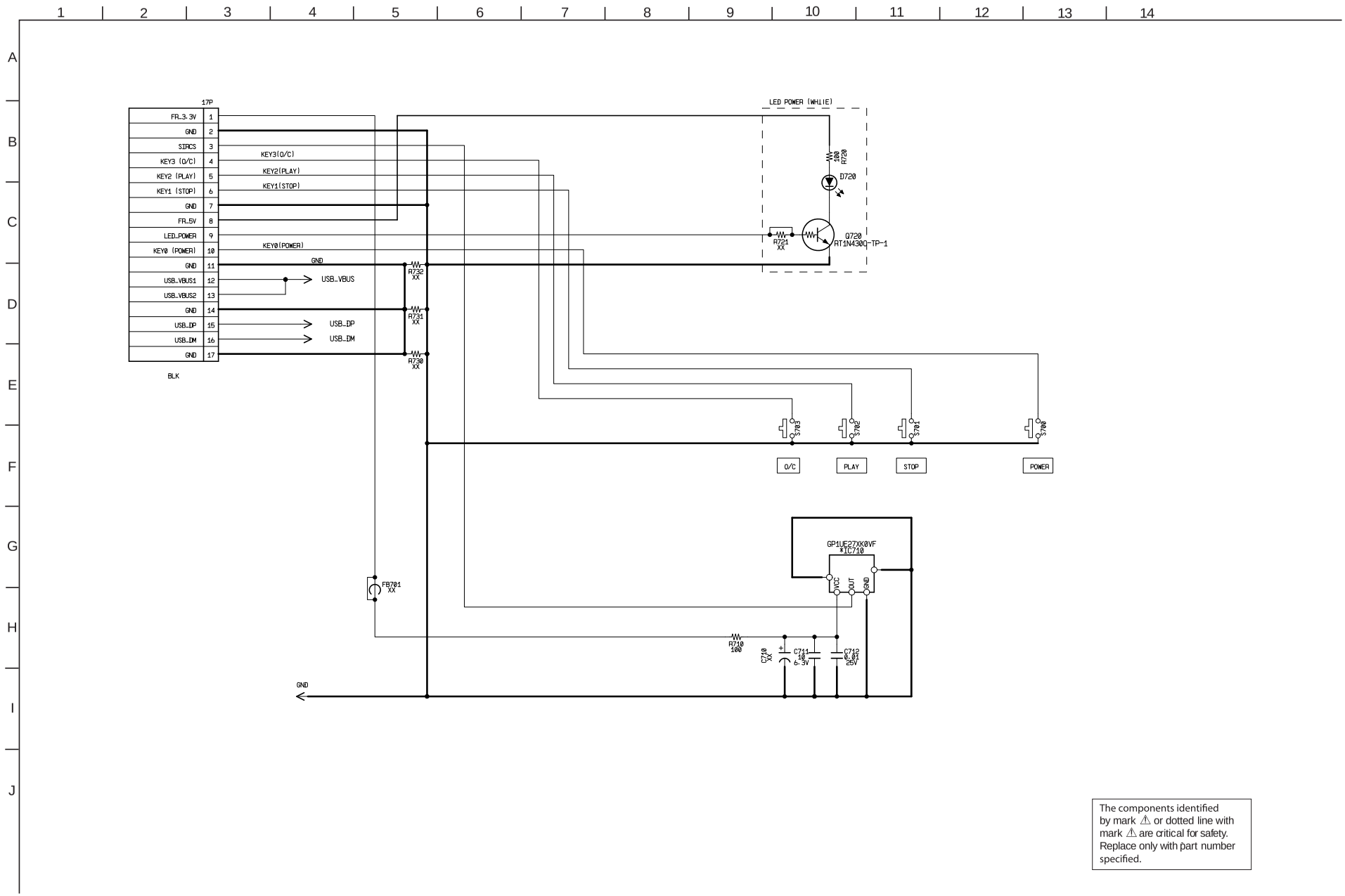
When indicating parts by reference number, please include the board name.

4-2. FRAME SCHEMATIC DIAGRAM



4-3. FR-316 BOARD (FRONT LEFT) SCHEMATIC DIAGRAM • See page 5-3 for printed wiring board.

- Ref. No.: FR-316 board; 20,000 series -

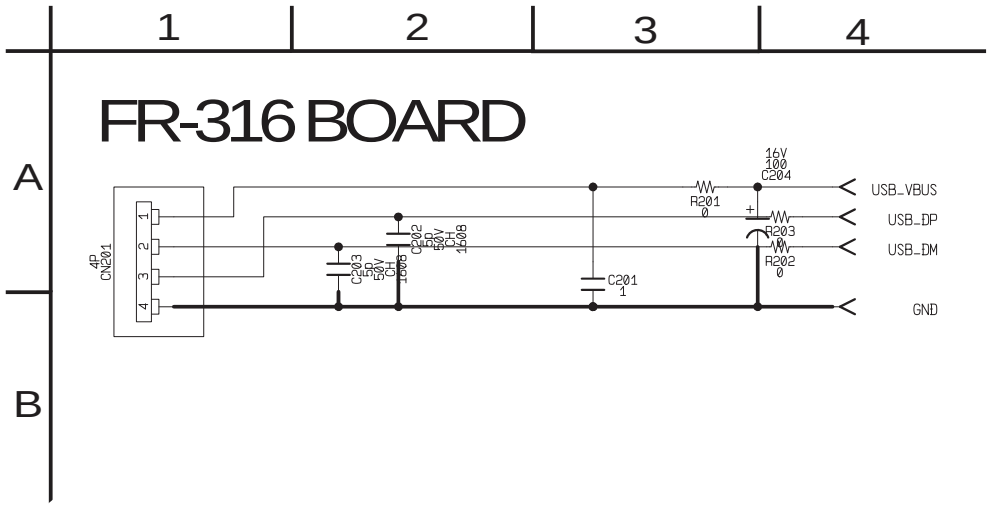


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

4-4. FR-316 BOARD (USB FRONT) SCHEMATIC DIAGRAM

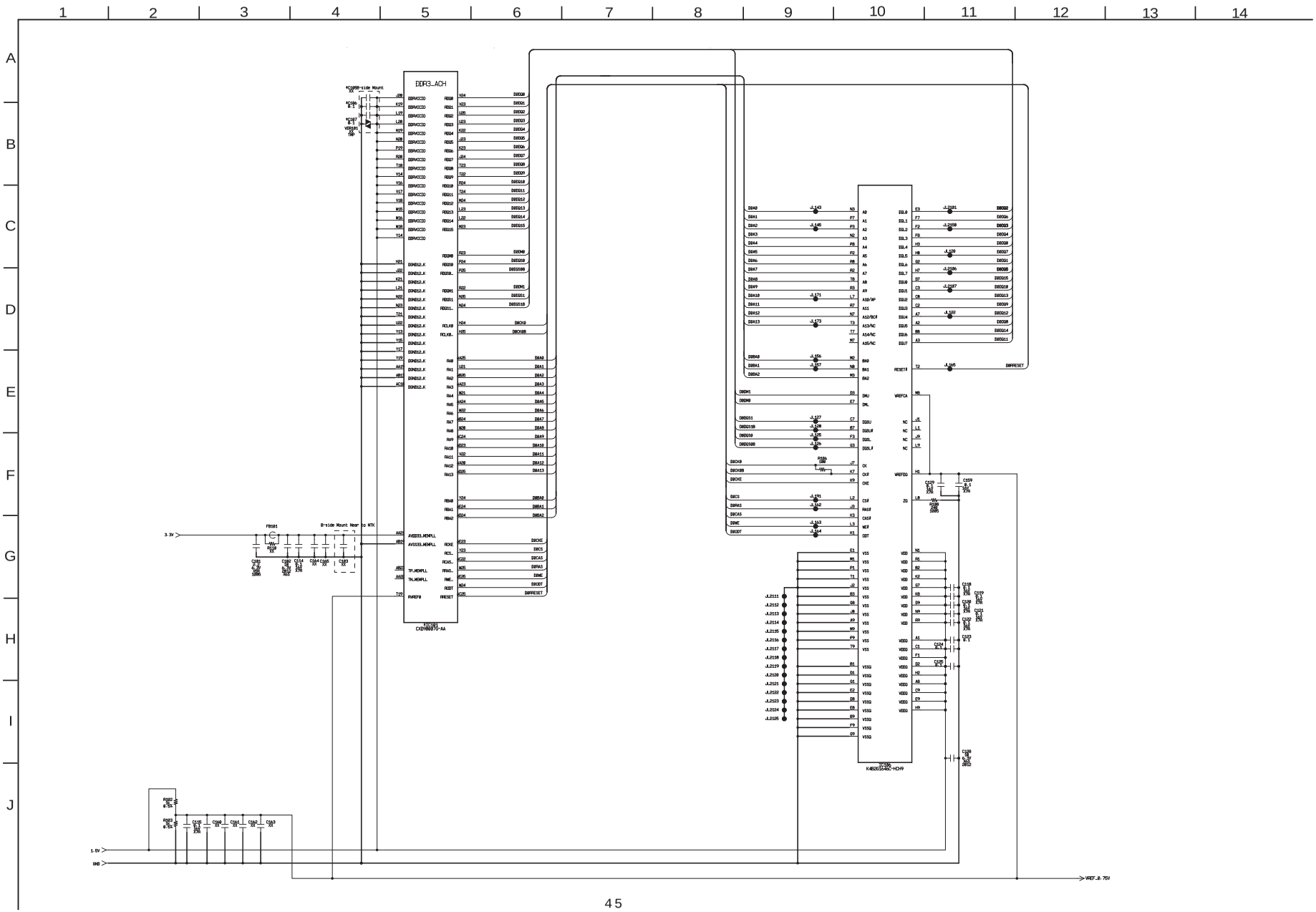
- Ref. No.: FR-316 board; 20,000 series -

• **See page 5-3 for printed wiring board.**



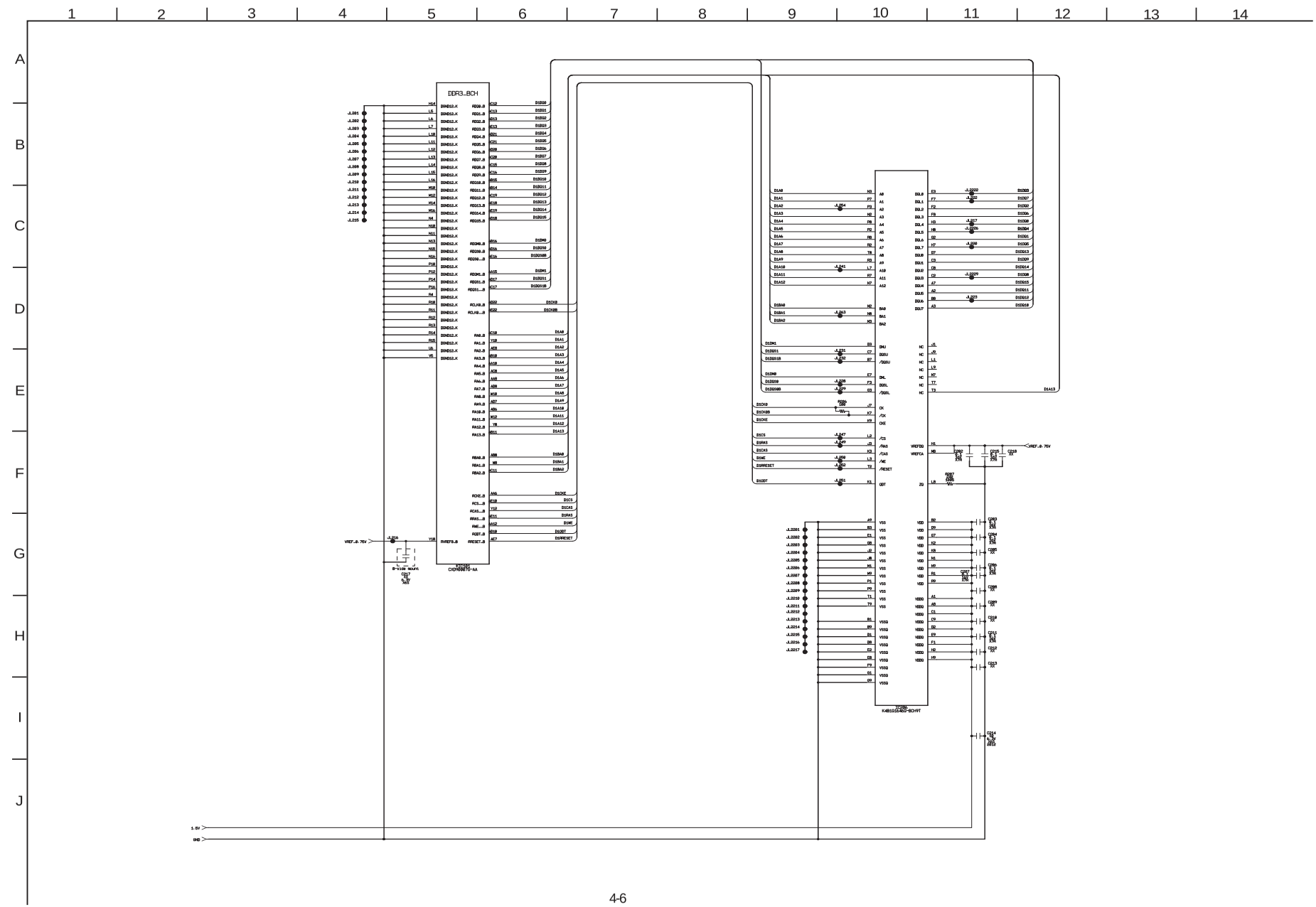
4-5. MB-143 BOARD (DDR 3 A) SCHEMATIC DIAGRAM (1/12) • See page 5-4 for printed wiring board.

- Ref. No.: MB-143 board; 10,000 series



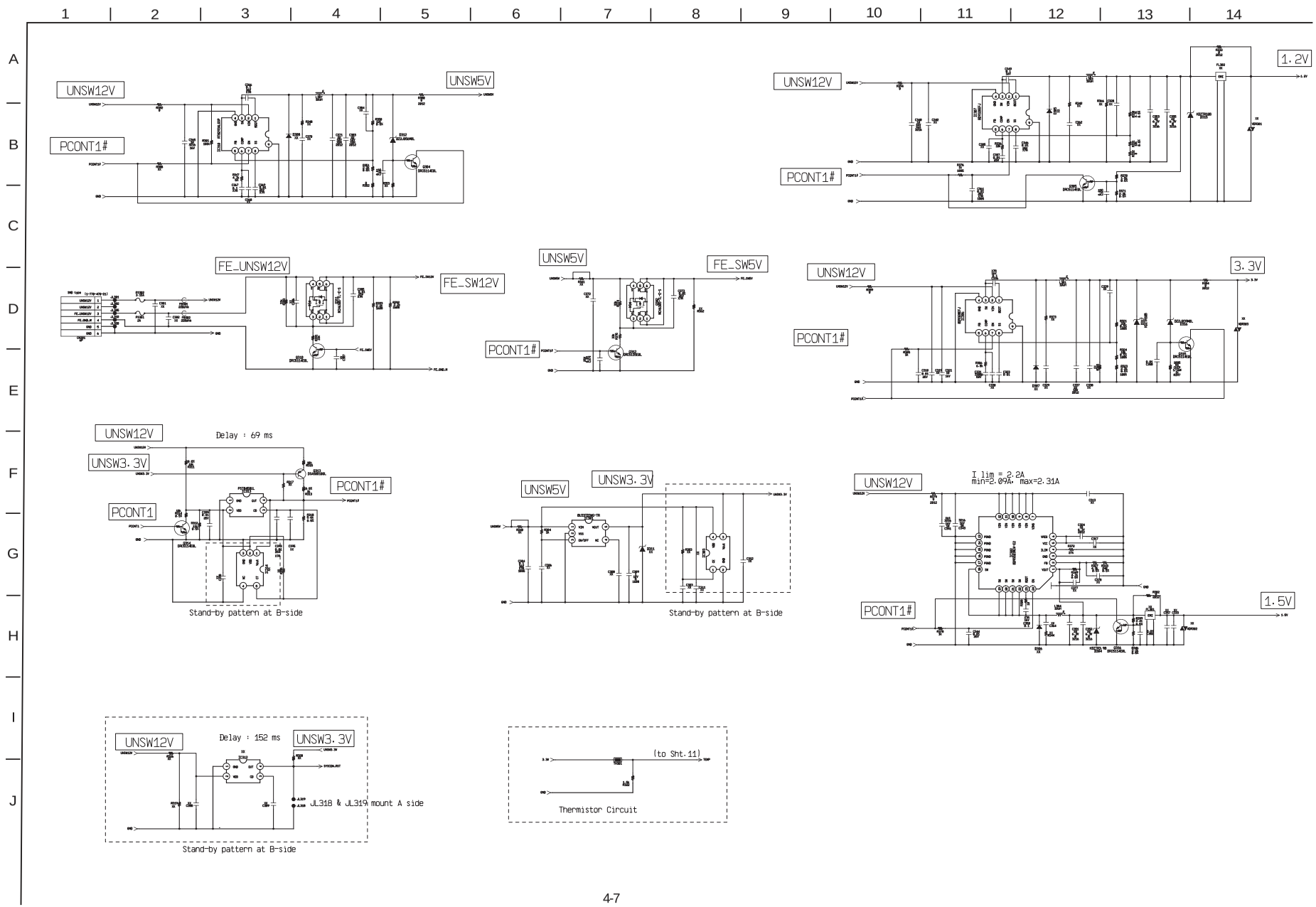
4-6. MB-143 BOARD (DDR 3 B) SCHEMATIC DIAGRAM (2/12) • See page 5-4 for printed wiring board.

- Ref. No.: MB-143 board; 10,000 series



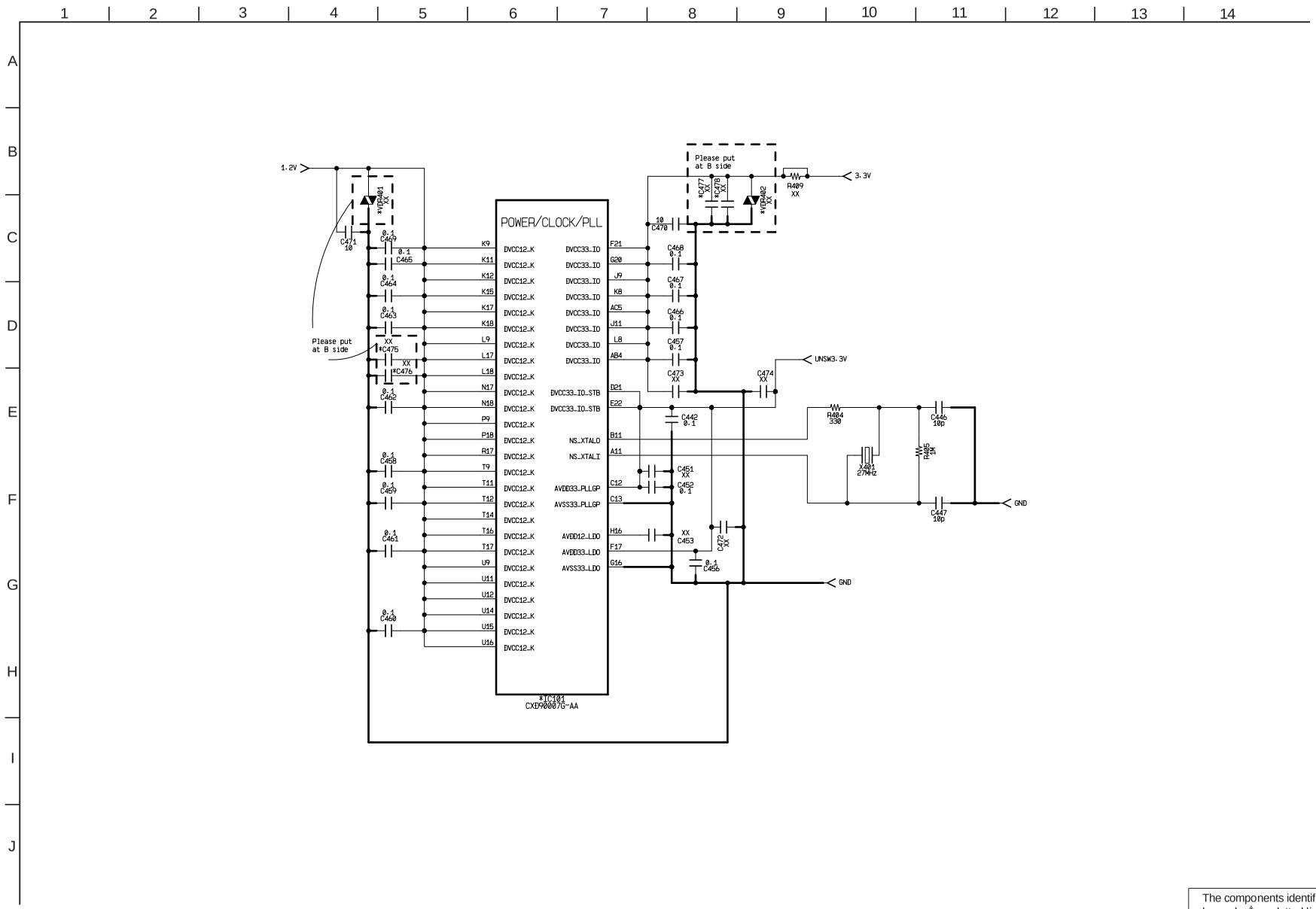
4-7. MB-143 BOARD (POWER) SCHEMATIC DIAGRAM (3/12) • See page 5-4 for printed wiring board.

- Ref. No.: MB-143 board; 10,000 series



4-8. MB-143 BOARD (CLK/POWER) SCHEMATIC DIAGRAM (4/12) • See page 5-4 for printed wiring board.

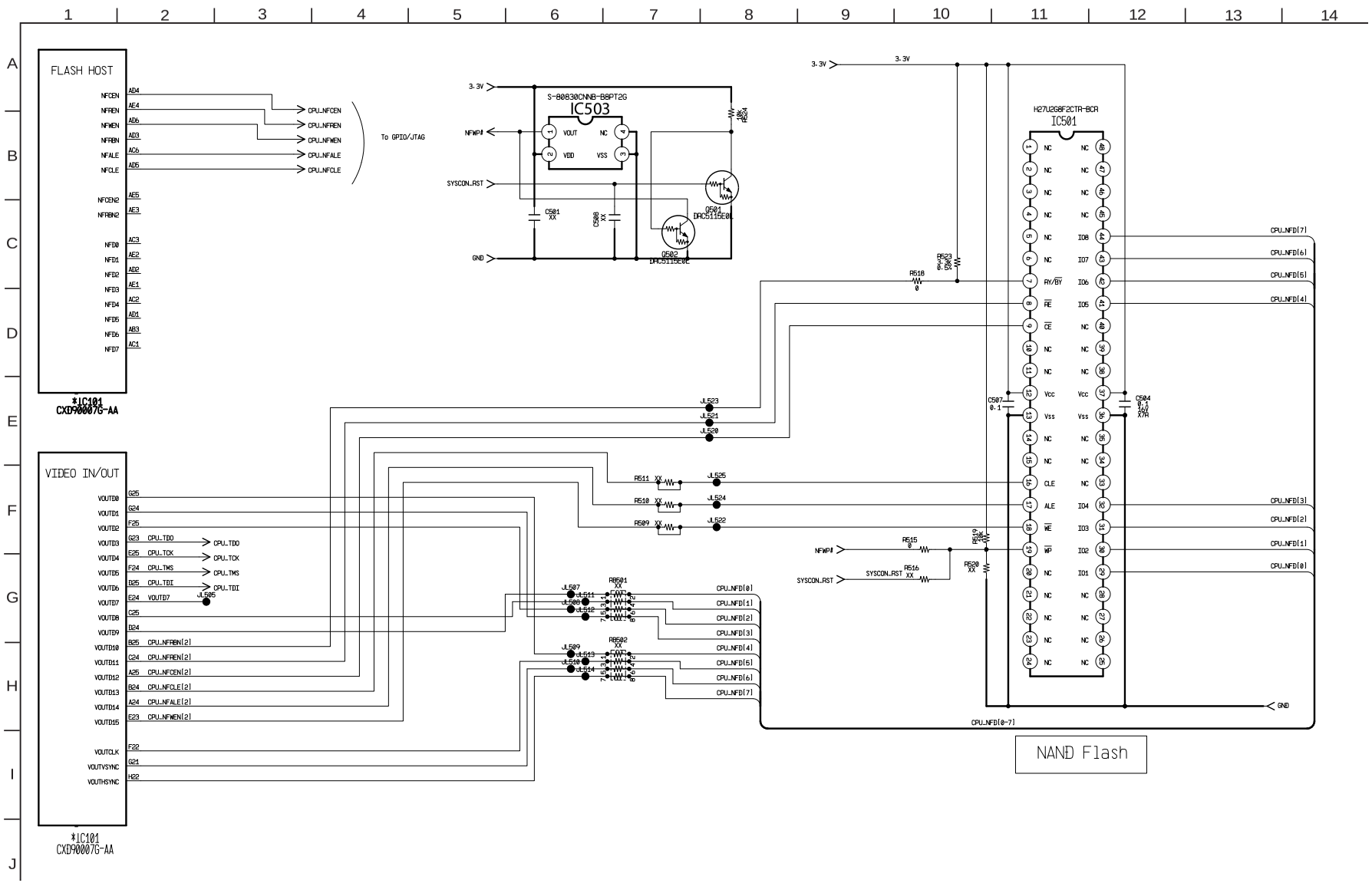
- Ref. No.: MB-143 board; 10,000 series



The components identifi ed by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

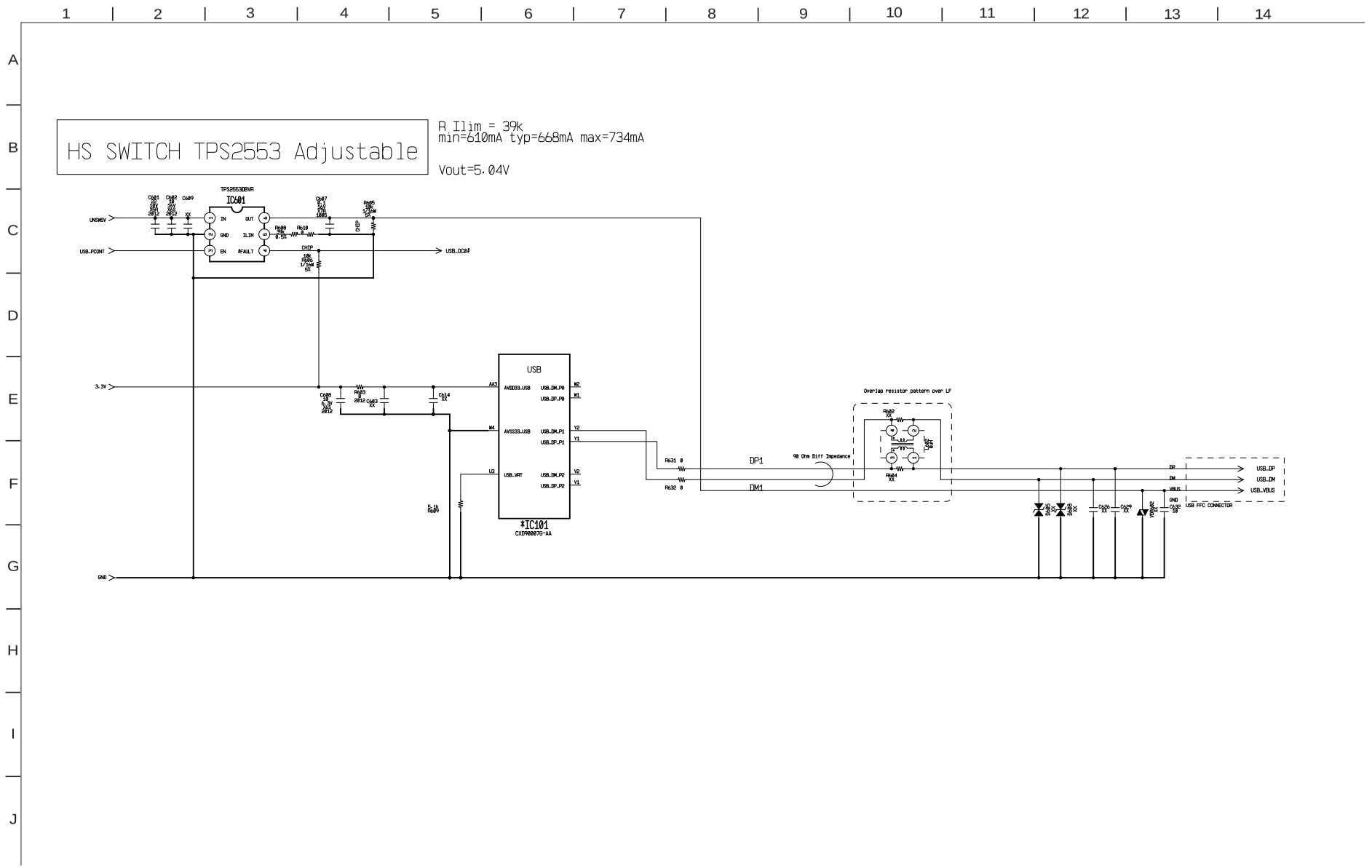
4-9. MB-143 BOARD (FLASH/HOST) SCHEMATIC DIAGRAM (5/12) • See page 5-4 for printed wiring board.

- Ref. No.: MB-143 board; 10,000 series



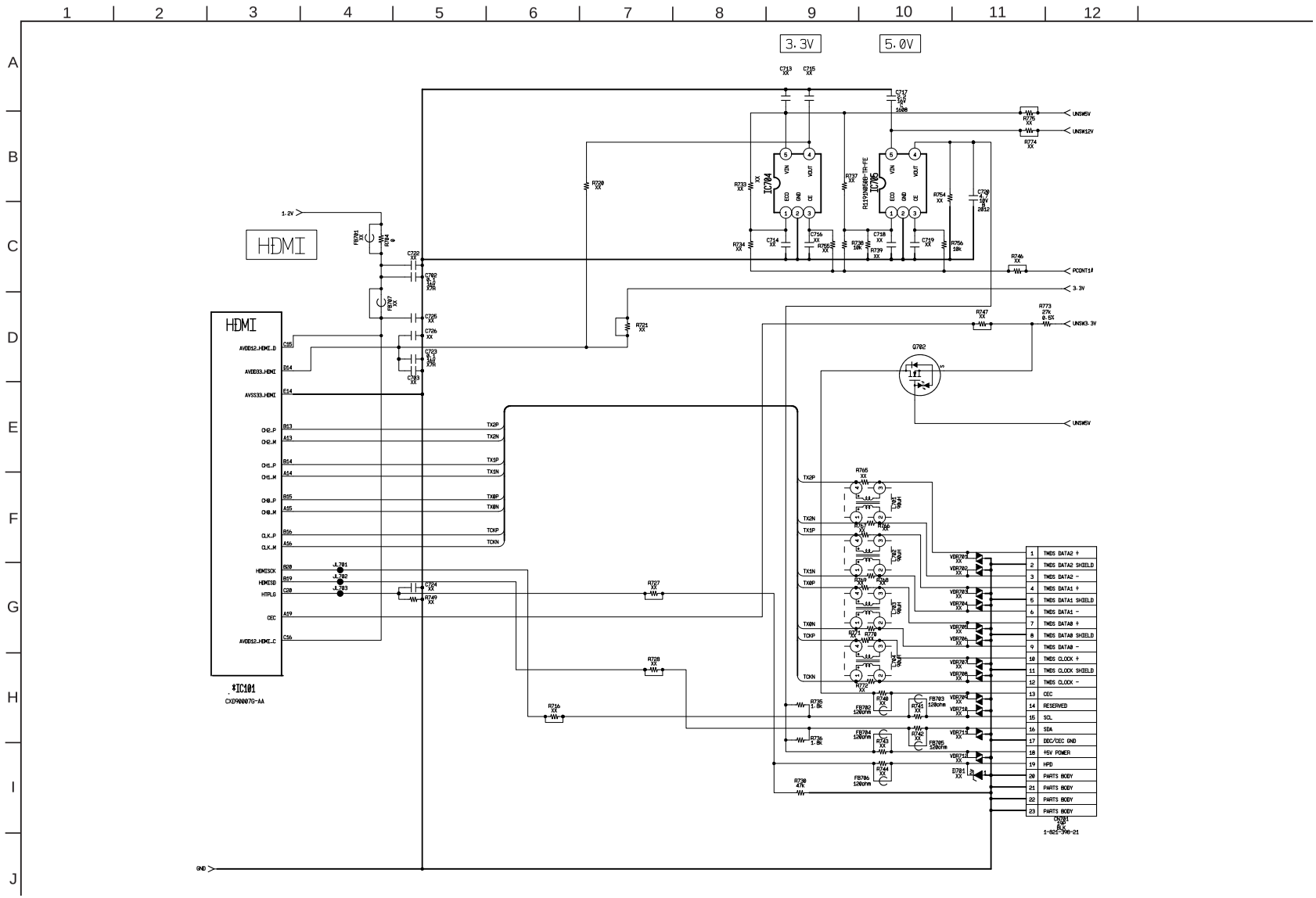
4-10. MB-143 BOARD (USB) SCHEMATIC DIAGRAM (6/12) • See page 5-4 for printed wiring board.

- Ref. No.: MB-143 board; 10,000 series



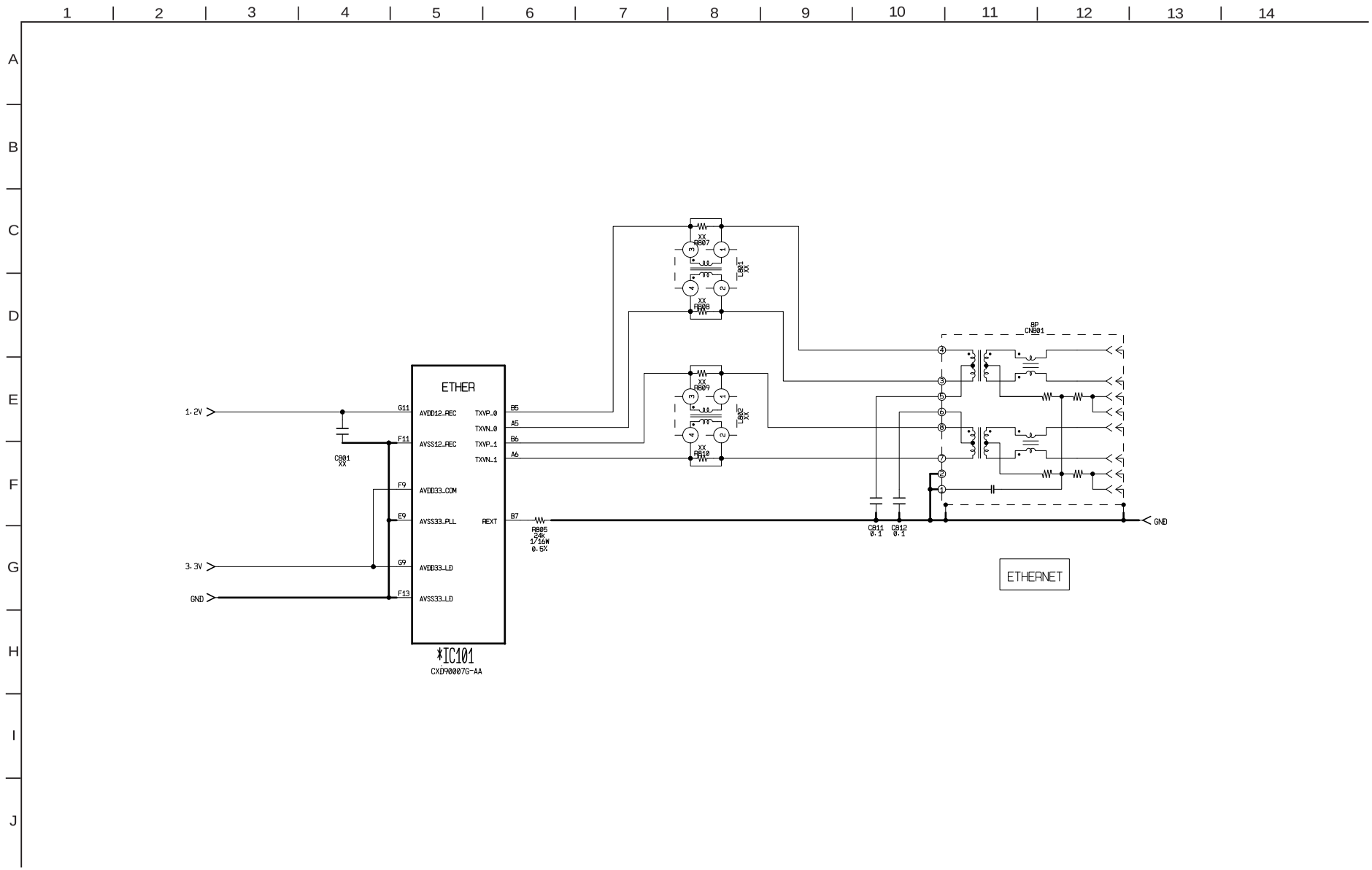
4-11. MB-143 BOARD (HDMI) SCHEMATIC DIAGRAM (7/12) • See page 5-4 for printed wiring board.

- Ref. No.: MB-143 board; 10,000 series



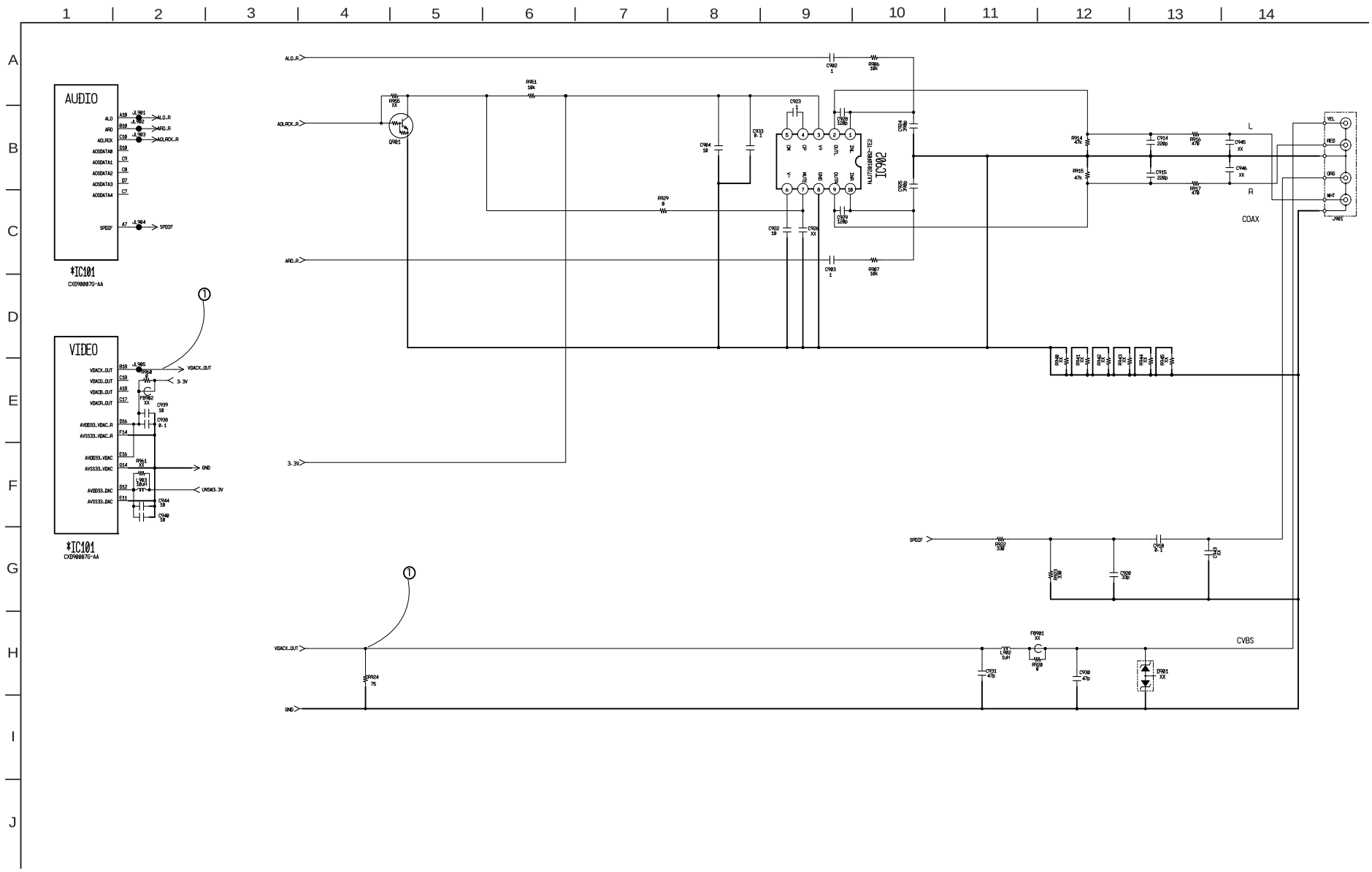
4-12. MB-143 BOARD (ETHERNET) SCHEMATIC DIAGRAM (8/12) • See page 5-4 for printed wiring board.

- Ref. No.: MB-143 board; 10,000 series



4-13. MB-143 BOARD (AUDIO VIDEO) SCHEMATIC DIAGRAM (9/12) • See page 5-4 for printed wiring board.

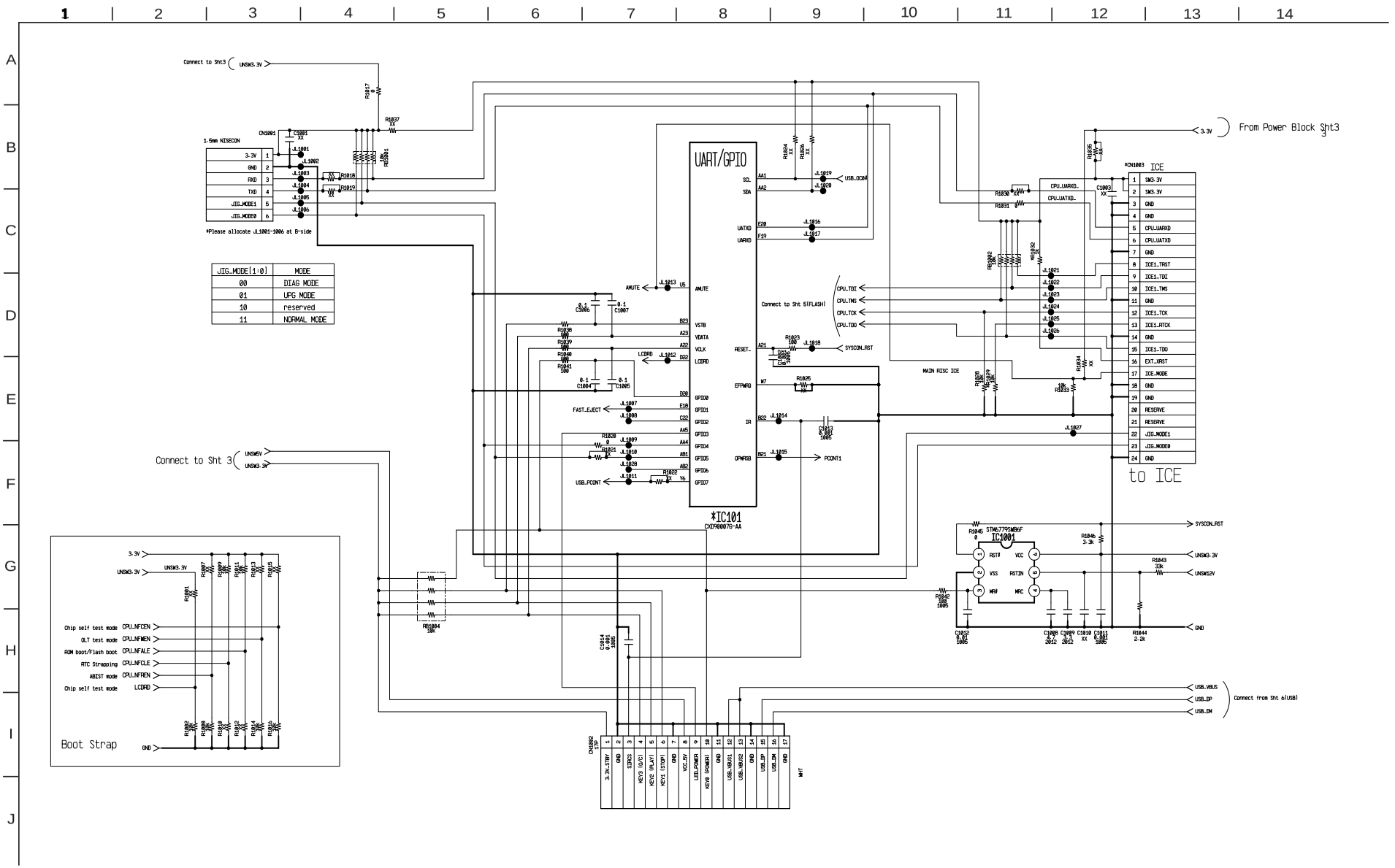
- Ref. No.: MB-143 board; 10,000 series



4-14. MB-143 BOARD (GPIO/JIAG) SCHEMATIC DIAGRAM (10/12) • See page 5-4 for printed wiring board.

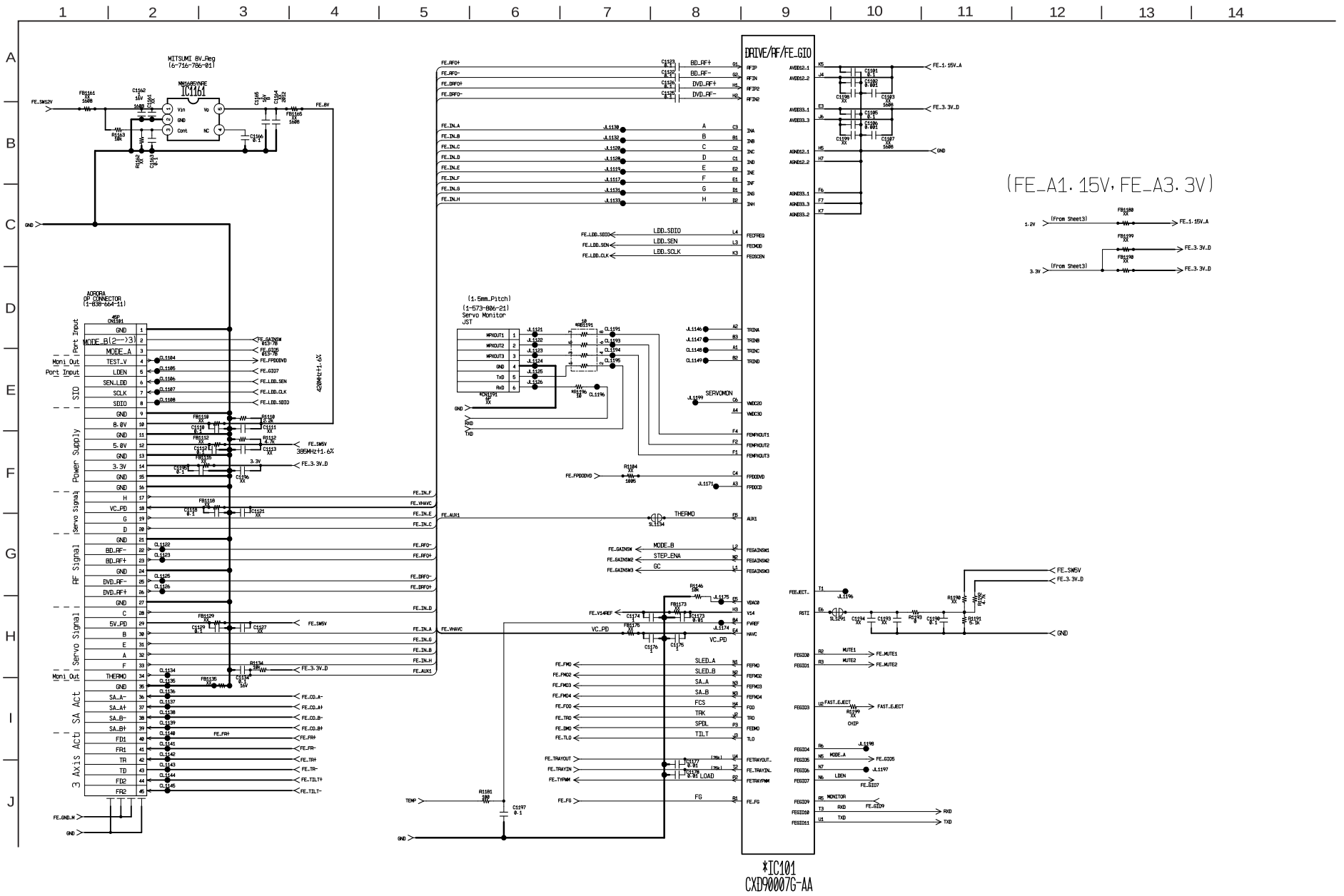
- Ref. No.: MB-143 board; 10,000 ser ies

-



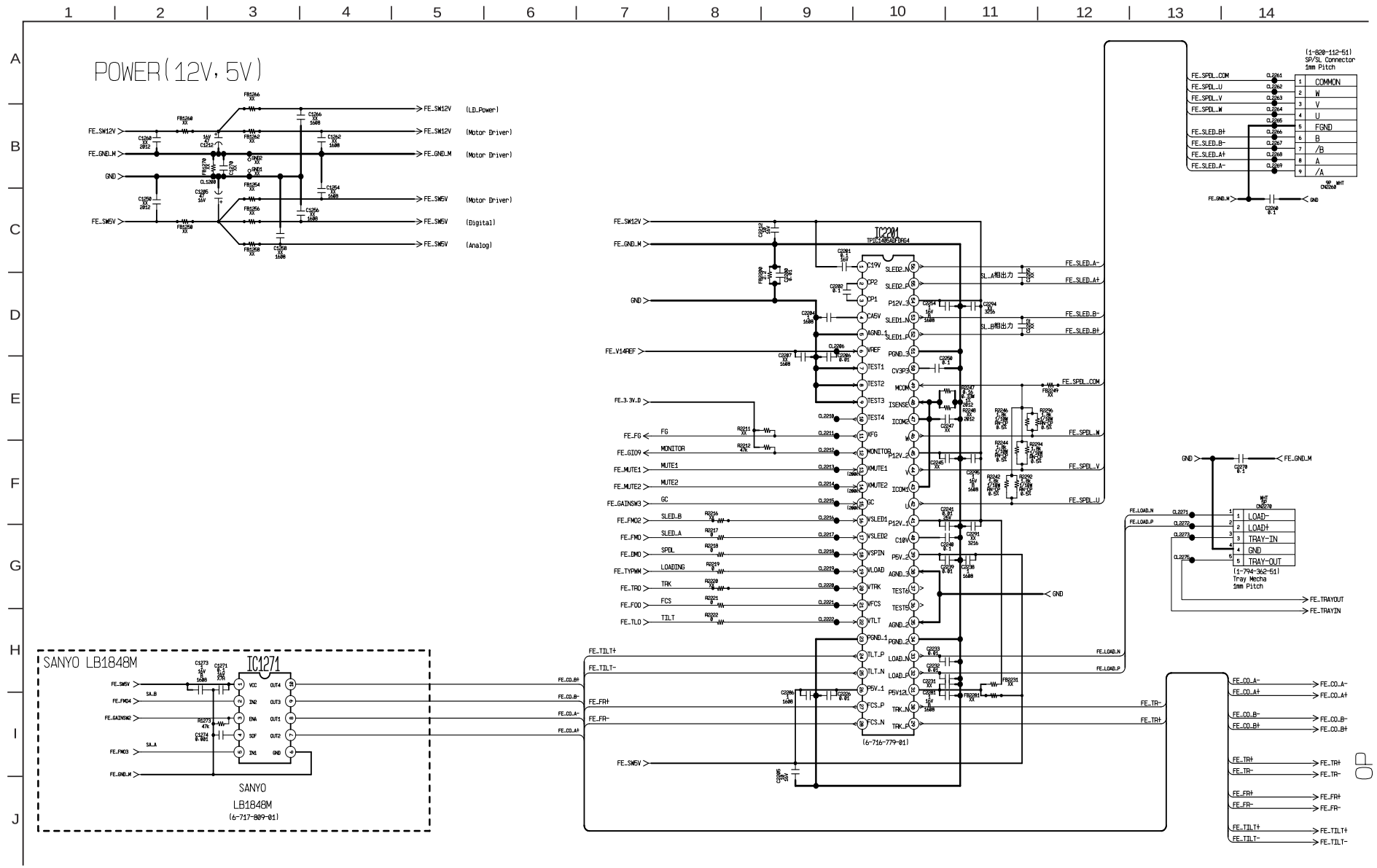
4-15. MB-143 BOARD (FE_POWER/GIO) SCHEMATIC DIAGRAM (11/12) • See page 5-4 for printed wiring board.

- Ref. No.: MB-143 board; 10,000 series



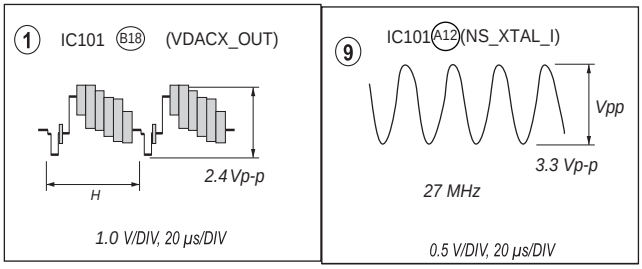
4-16. MB-143 BOARD (FE_POWER/MOTOR_DRIVE) SCHEMATIC DIAGRAM (12/12) • See page 5-4 for printed wiring board.

- Ref. No.: MB-143 board; 10,000 series



4-20. WAVEFORMS

MB-143 BOARD



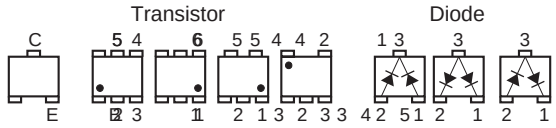
SECTION 5
PRINTED WIRING BOARDS

5-1. THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS

- : Uses unleaded solders.
- : Pattern from the side which enables seeing.
  (The other layers' patterns are not indicated)

Caution:	
Pattern face side: (SIDE B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (SIDE A)	Parts on the parts face side seen from the parts face are indicated.

- Through hole is omitted.
- There are few cases that the part printed on diagram isn't mounted in this model.
- : panel designation
- Chip parts.



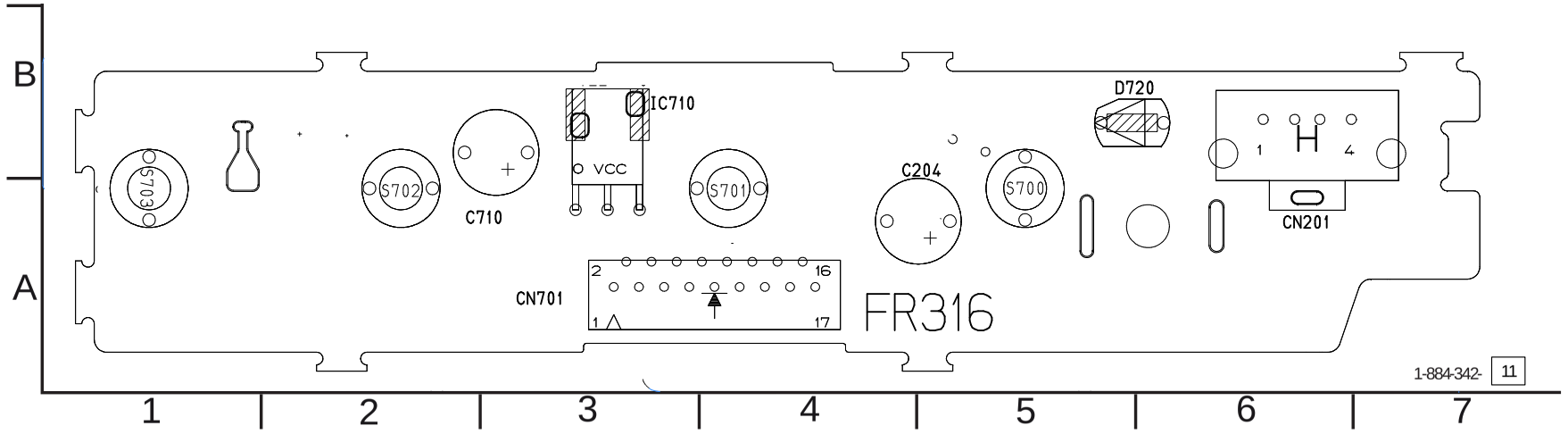
5-2. FR-316 BOARD (FRONT RIGHT) PRINTED WIRING BOARD (SIDE A) • **See page 2-5 for circuit boards location.**

- Ref. No.: FR-316 board; 20,000 series -

: Uses unleaded solder.

There are a few cases that the part isn't mounted in this model is printed on this diagram.

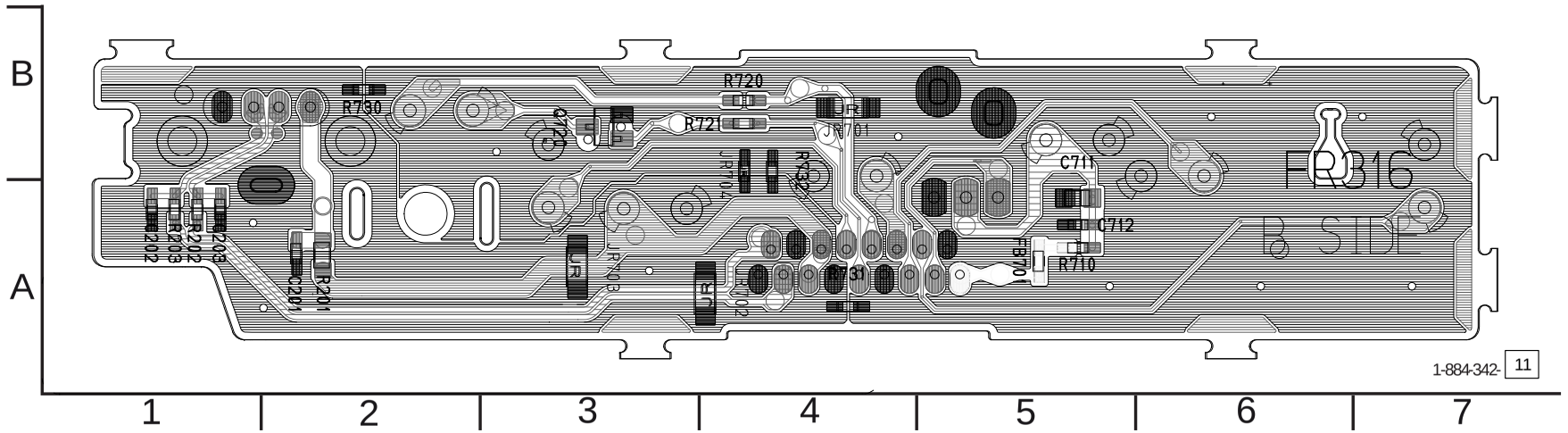
FR-316 BOARD (SIDE A)



FR-316 BOARD (SIDE A)

CN201	A-6
CN701	A-3
D720	B-5
IC710	B-3

FR-316 BOARD (SIDE B)



FR-316 BOARD (SIDE B)

Q720	B-3

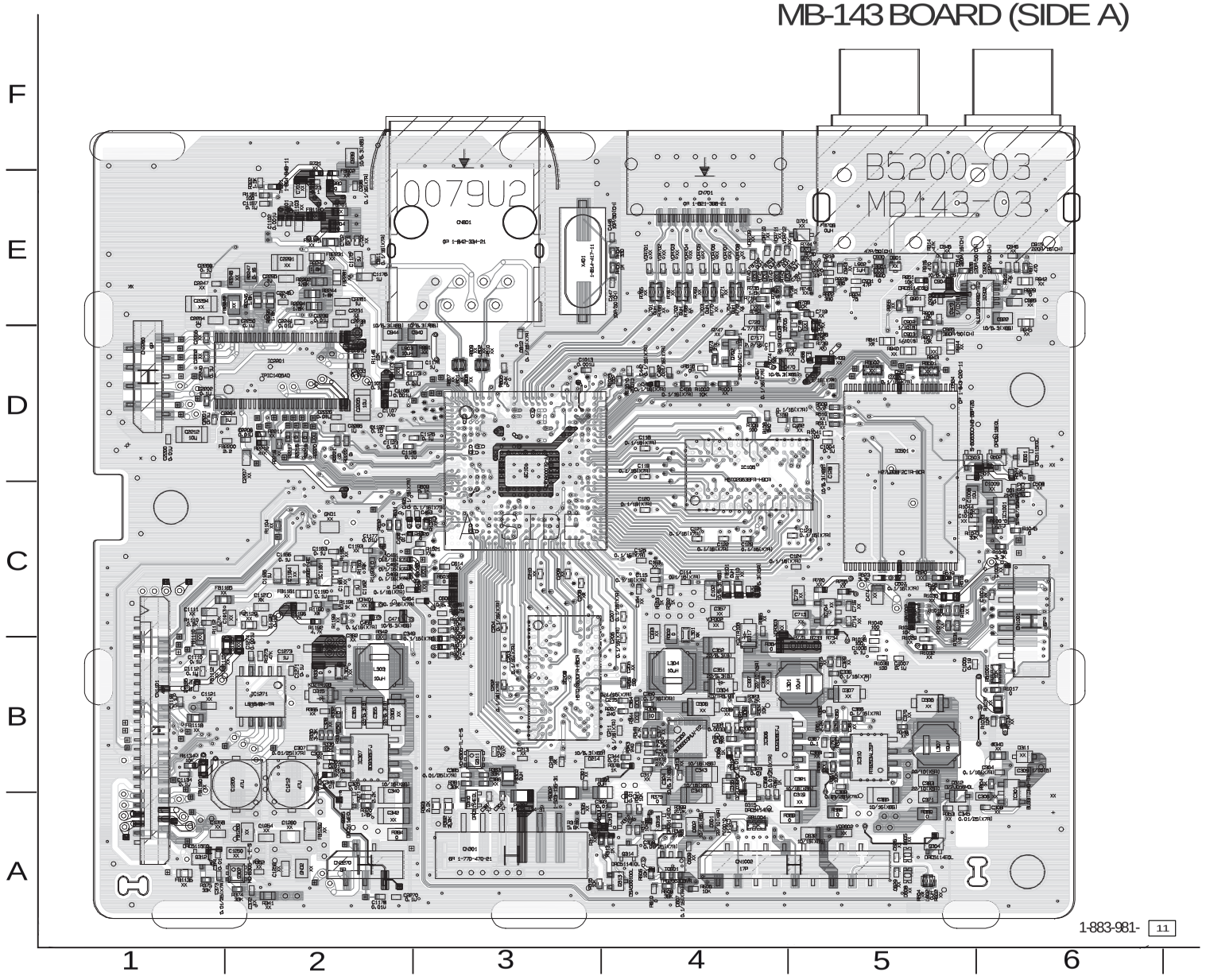
5-3. MB-143 BOARD (MAIN) PRINTED WIRING BOARD (SIDE **A**) **• See page 2-5 for circuit boards location.**

- Ref. No.: MB-143 board; 10,000 series -

There are a few cases that the part isn't mounted in this model is printed on this diagram.

: Uses unleaded solder.

MB-143 BOARD (SIDE A)



MB-143 BOARD (SIDE A)

CN301	A-3	IC1271	B-2
		IC2201	D-2
CN801	E-3	IC106	C-4
CN2260	D-1	IC307	B-3
CN1101	A-1	IC101	C-3
CN2270	A-2	IC501	C-5
CN1002	A-4	IC302	B-4
CN1001	B-6	IC306	B-4
		IC310	B-5
D605	A-5	IC1001	C-6
D608	A-5		
D315	A-4	Q502	D-6
		Q501	D-6
		Q901	E-5
		Q702	D-4
		Q312	A-1
		X401	D-3

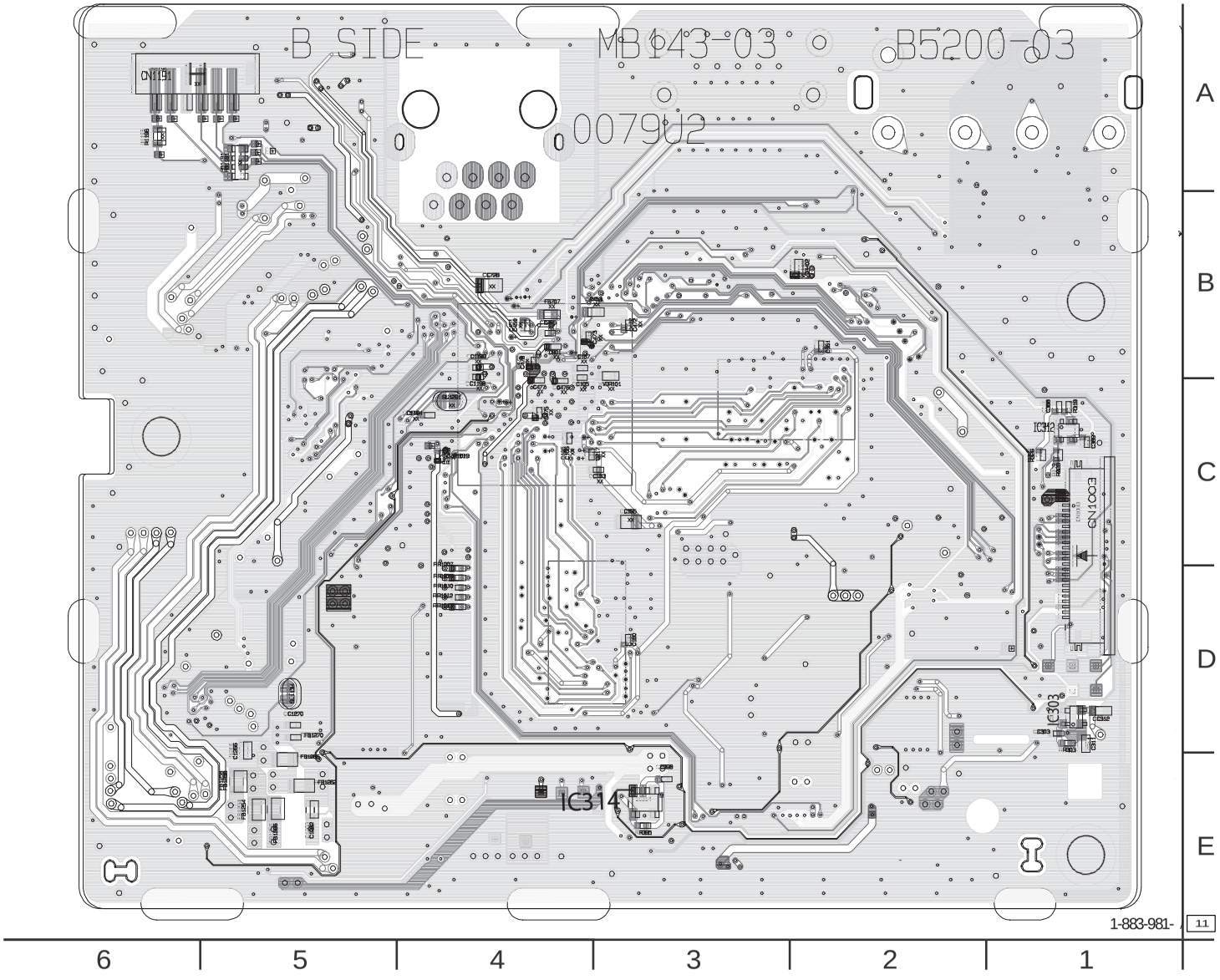
5-4. MB-143 BOARD (MAIN) PRINTED WIRING BOARD (SIDE B) • See page 2-5 for circuit boards location.

- Ref. No.: MB-143 board; 10,000 series -

: Uses unleaded solder.

There are a few cases that the part isn't mounted in this model is printed on this diagram.

MB-143 BOARD (SIDE B)



MB-143 BOARD (SIDE B)

IC314	4-E
IC303	1-D
CN1003	1-D
CN1191	6-A

SECTION 6
IC PIN FUNCTION DESCRIPTION

MAIN SYSTEM CONTROL PIN FUNCTION (MB-143 BOARD IC 101 : CXD90007G-AB)

Pin	Symbol	Type	Description
K9	DVCC12_K	Power	1.2V digital power
K11	DVCC12_K	Power	1.2V digital power
K12	DVCC12_K	Power	1.2V digital power
K15	DVCC12_K	Power	1.2V digital power
K17	DVCC12_K	Power	1.2V digital power
K18	DVCC12_K	Power	1.2V digital power
L9	DVCC12_K	Power	1.2V digital power
L17	DVCC12_K	Power	1.2V digital power
L18	DVCC12_K	Power	1.2V digital power
N17	DVCC12_K	Power	1.2V digital power
N18	DVCC12_K	Power	1.2V digital power
P9	DVCC12_K	Power	1.2V digital power
P18	DVCC12_K	Power	1.2V digital power
R17	DVCC12_K	Power	1.2V digital power
T9	DVCC12_K	Power	1.2V digital power
T11	DVCC12_K	Power	1.2V digital power
T12	DVCC12_K	Power	1.2V digital power
T14	DVCC12_K	Power	1.2V digital power
T16	DVCC12_K	Power	1.2V digital power
T17	DVCC12_K	Power	1.2V digital power
U9	DVCC12_K	Power	1.2V digital power
U11	DVCC12_K	Power	1.2V digital power
U12	DVCC12_K	Power	1.2V digital power
U14	DVCC12_K	Power	1.2V digital power
U15	DVCC12_K	Power	1.2V digital power
U16	DVCC12_K	Power	1.2V digital power
H14	DGND12_K	Ground	Digital ground
H21	DGND12_K	Ground	Digital ground
J22	DGND12_K	Ground	Digital ground
K21	DGND12_K	Ground	Digital ground
L5	DGND12_K	Ground	Digital ground
L6	DGND12_K	Ground	Digital ground
L7	DGND12_K	Ground	Digital ground
L10	DGND12_K	Ground	Digital ground
L11	DGND12_K	Ground	Digital ground
L12	DGND12_K	Ground	Digital ground
L13	DGND12_K	Ground	Digital ground
L14	DGND12_K	Ground	Digital ground
L15	DGND12_K	Ground	Digital ground
L16	DGND12_K	Ground	Digital ground
L21	DGND12_K	Ground	Digital ground
M10	DGND12_K	Ground	Digital ground
M12	DGND12_K	Ground	Digital ground
M14	DGND12_K	Ground	Digital ground
M16	DGND12_K	Ground	Digital ground
N4	DGND12_K	Ground	Digital ground
N10	DGND12_K	Ground	Digital ground
N11	DGND12_K	Ground	Digital ground
N13	DGND12_K	Ground	Digital ground
N15	DGND12_K	Ground	Digital ground
N16	DGND12_K	Ground	Digital ground
N22	DGND12_K	Ground	Digital ground
N23	DGND12_K	Ground	Digital ground
P10	DGND12_K	Ground	Digital ground
P12	DGND12_K	Ground	Digital ground
P14	DGND12_K	Ground	Digital ground
P16	DGND12_K	Ground	Digital ground
R4	DGND12_K	Ground	Digital ground
R10	DGND12_K	Ground	Digital ground
R11	DGND12_K	Ground	Digital ground
R12	DGND12_K	Ground	Digital ground
R13	DGND12_K	Ground	Digital ground
R14	DGND12_K	Ground	Digital ground
R15	DGND12_K	Ground	Digital ground
T21	DGND12_K	Ground	Digital ground
U6	DGND12_K	Ground	Digital ground
U22	DGND12_K	Ground	Digital ground
V5	DGND12_K	Ground	Digital ground
Y13	DGND12_K	Ground	Digital ground
Y15	DGND12_K	Ground	Digital ground
Y17	DGND12_K	Ground	Digital ground
Y19	DGND12_K	Ground	Digital ground
AA19	DGND12_K	Ground	Digital ground

AB13	DGND12_K	Ground	Digital ground
AC18	DGND12_K	Ground	Digital ground
F21	DVCC33_IO	Power	3.3V Digital IO power
G20	DVCC33_IO	Power	3.3V Digital IO power
J9	DVCC33_IO	Power	3.3V Digital IO power
J11	DVCC33_IO	Power	3.3V Digital IO power
K8	DVCC33_IO	Power	3.3V Digital IO power
L8	DVCC33_IO	Power	3.3V Digital IO power
AB4	DVCC33_IO	Power	3.3V Digital IO power
AC5	DVCC33_IO	Power	3.3V Digital IO power
D21	DVCC33_IO_S TB	Power	3.3V Digital IO power for Stand-By Module
E22	DVCC33_IO_S TB	Power	3.3V Digital IO power for Stand-By Module
J20	DDRVCCIO	Power	1.5V Digital IO power
K19	DDRVCCIO	Power	1.5V Digital IO power
L19	DDRVCCIO	Power	1.5V Digital IO power
L20	DDRVCCIO	Power	1.5V Digital IO power
N19	DDRVCCIO	Power	1.5V Digital IO power
N20	DDRVCCIO	Power	1.5V Digital IO power
P19	DDRVCCIO	Power	1.5V Digital IO power
R20	DDRVCCIO	Power	1.5V Digital IO power
T18	DDRVCCIO	Power	1.5V Digital IO power
V14	DDRVCCIO	Power	1.5V Digital IO power
V16	DDRVCCIO	Power	1.5V Digital IO power
V17	DDRVCCIO	Power	1.5V Digital IO power
V18	DDRVCCIO	Power	1.5V Digital IO power
W15	DDRVCCIO	Power	1.5V Digital IO power
W16	DDRVCCIO	Power	1.5V Digital IO power
W18	DDRVCCIO	Power	1.5V Digital IO power
Y14	DDRVCCIO	Power	1.5V Digital IO power
XTAL/PLL			
AA21	AVDD33_MEM PLL	Power	3.3V Analog Power for MEMPLL
AB19	AVSS33_MEM PLL	Ground	Analog Ground for MEMPLL
AA22	TN_MEMPLL	Analog	Test Pin
AB23	TP_MEMPLL	Analog	Test Pin
H16	AVDD12_LDO	Power	1.2V standby power
F17	AVDD33_LDO	Power	3.3V power for standby
G16	AVSS33_LDO	Ground	Analog ground for standby
C12	AVDD33_PLLG P	Power	3.3V Analog Power for PLL Group
C13	AVSS33_PLLG P	Power	Analog ground for PLL Group
A11	NS_XTALI	I	27MHz Crystal In
B11	NS_XTALO	O	27MHz Crystal Out
AUDIO PWM DAC interface			
D12	AVDD33_DAC	Power	3.3V Analog Power
E11	AVSS33_DAC	Ground	Analog Ground
A10	AL0	I/O	Multiple function: (1) Audio output bit clock (2) Audio PWM output (3) GPIO
B10	AR0	I/O	Multiple function: (1) Audio output master clock (2) Audio PWM output (3) GPIO
Audio Interface			
U5	AMUTE	I/O	Multiple function: (1) 1st Audio DAC mute (2) GPIO
C10	AOLRCK	I/O	Multiple function: (1) Audio output left-right clock (2) 2nd Audio DAC mute (3) Video out DE signal (4) 2nd RS232 TX (5) External Interrupt 4 (6) Slave I2C clock (7) PWM control signal output (8) Ethernet Activity LED (9) GPIO
D10	AOSDATA0	I/O	Multiple function: (1) Audio output serial data 0 (2) 2nd Audio DAC mute (3) Video out DE signal (4) 2nd RS232 RX (5) External Interrupt 2 (6) Slave I2C clock (7) PWM control signal output (8) Ethernet Duplex LED (9) GPIO

C9	AOSDATA1	I/O	Multiple function: (1) Audio output serial data 1 (2) Audio output master clock (3) Microphone input master clock (4) Video out DE signal (5) External Interrupt 1 (6) 3th RS232 TX (7) Slave I2C clock (8) PWM control signal output (9) Ethernet Activity LED (10) GPIO
C8	AOSDATA2	I/O	Multiple function: (1) Audio output serial data 2 (2) Audio output bit clock (3) Microphone input bit clock (4) Video out DE signal (5) External Interrupt 4 (6) 3th RS232 RX (7) Slave I2C clock (8) PWM control signal output (9) External Duplex LED (10) 1st Audio DAC mute (11) GPIO
D7	AOSDATA3	I/O, 5V	Multiple function: (1) Audio output serial data 3 (2) Audio output left-right clock (3) Microphone input left-right clock (4) Video out DE signal (5) External Interrupt 2 (6) 2nd RS232 TX (7) Slave I2C clock (8) PWM control signal output (9) External Speed LED (10) GPIO
C7	AOSDATA4	I/O, 5V	Multiple function: (1) Audio output serial data 4 Multiple function: (3) Microphone input data (4) Video out DE signal (5) External Interrupt 1 (6) 2nd RS232 RX (7) Slave I2C clock (8) PWM control signal output (9) Ethernet Link LED (10) GPIO
A7	SPDIF	I/O	Multiple function: (1) SPDIF digital audio output (2) GPIO
Analog Video Out Interface			
E16	AVDD33_VDA C	Power	3.3 V Analog Power
D16	AVDD33_VDA C_R	Power	3.3 V Analog Power
G14	AVSS33_VDAC	Ground	Analog Ground
F14	AVSS33_VDAC_R	Ground	Analog Ground
A18	VDACB_OUT	Analog	DAC output
C18	VDACG_OUT	Analog	DAC output
C17	VDACR_OUT	Analog	DAC output
B18	VDACX_OUT	Analog	DAC output
Digital Video Output Interface			
F22	VOUTCLK	I/O, 5V	Multiple function: (1) Video out mode: CLOCK (2) 2nd RS232 TX (3) Slave I2C clock (4) PWM control signal output (5) Ethernet Activity LED (6) NAND Flash Data input/output bit 5 (7) Secure Disk interface clock (8) GPIO
H22	VOUTHSYNC	I/O	Multiple function: (1) Video out mode: HSYNC (2) 2nd RS232 RX (3) Slave I2C data (4) External Interrupt 1 (5) Ethernet Duplex LED (6) NAND Flash Data input/output bit 7 (7) Secure Disk interface command (8) GPIO

G21	VOUTVSYNC	I/O	Multiple function: (1) Video out mode: VSYNC (2) 3th RS232 TX (3) External interrupt 2 (4) Ethernet Speed LED (5) NAND Flash Data input/output bit 6 (6) Secure Disk interface data bit 0 (7) GPIO
G25	VOUTDO	I/O	Multiple function: (1) Video out 16-bit 422 mode:C0 (2) External Interrupt 4 (3) 3th RS232 RX (4) Ethernet Link LED (5) NAND Flash Data input/output bit 4 (6) Secure Disk interface data bit 1 (7) GPIO
G24	VOUTD1	I/O	Multiple function: (1) Video out 16-bit 422 mode:C1 (2) Slave I2C clock (3) NAND Flash Data input/output bit 3 (4) Secure Disk interface data bit 2 (5) GPIO
F25	VOUTD2	I/O	Multiple function: (1) Video out 16-bit 422 mode:C2 (2) Slave I2C clock (3) NAND Flash Data input/output bit 2 (4) Secure Disk interface data bit 3 (5) GPIO
G23	VOUTD3	I/O	Multiple function: (1) Video out 16-bit 422 mode:C3 (2) JTAG ICE data out (3) GPIO
E25	VOUTD4	I/O	Multiple function: (1) Video out 16-bit 422 mode:C4 (2) JTAG ICE clock (3) GPIO
F24	VOUTD5	I/O	Multiple function: (1) Video out 16-bit 422 mode:C5 (2) JTAG ICE data in (3) GPIO
D25	VOUTD6	I/O	Multiple function: (1) Video out 16-bit 422 mode:C6 (2) JTAG ICE data in (3) GPIO
E24	VOUTD7	I/O	Multiple function: (1) Video out 16-bit 422 mode:C7 (2) Audio line input data (3) GPIO
C25	VOUTD8	I/O	Multiple function: (1) Video out 16-bit 422 mode: Y0 (2) Microphone input master clock (3) 2nd RS232 TX (4) Slave I2C clock (5) PWM control signal output (6) Ethernet Activity LED (7) NAND Flash Data input/output bit 1 (8) GPIO
D24	VOUTD9	I/O	Multiple function: (1) Video out 16-bit 422 mode: Y1 (2) Microphone input bit clock (3) 2nd RS232 RX (4) Slave I2C clock (5) External Interrupt 1 (6) Ethernet Duplex LED (7) NAND Flash Data input/output bit 0 (8) GPIO
B25	VOUTD10	I/O, 5V	Multiple function: (1) Video out 16-bit 422 mode: Y2 (2) Microphone input left-right clock (3) 3th RS232 TX (4) Slave I2C clock (5) External Interrupt 2 (6) Ethernet Speed LED (7) NAND Flash ready/busy (8) GPIO

C24	VOUTD11	I/O, 5V	Multiple function: (1) Video out 16-bit 422 mode: Y3 (2) Microphone input data (3) 3th RS232 RX (4) Slave I2C data (5) External Interrupt 4 (6) Ethernet Link LED (7) NAND Flash ready enable (8) GPIO
A25	VOUTD12	I/O, 5V	Multiple function: (1) Video out 16-bit 422 mode: Y4 (2) SPDIF input master clock (3) 2nd RS232 TX (4) Slave I2C clock (5) PWM control signal output (6) Ethernet Activity LED (7) NAND Flash chip enable (8) GPIO
B24	VOUTD13	I/O, 5V	Multiple function: (1) Video out 16-bit 422 mode: Y5 (2) SPDIF input bit clock (3) 2nd RS232 RX (4) Slave I2C data (5) External Interrupt 1 (6) Ethernet Duplex LED (7) NAND Flash command latch enable (8) GPIO
A24	VOUTD14	I/O, 5V	Multiple function: (1) Video out 16-bit 422 mode: Y6 (2) SPDIF input left-right clock (3) 3th RS232 RX (4) Slave I2C clock (5) External Interrupt 2 (6) Ethernet Speed LED (7) NAND Flash address latch enable (8) GPIO
E23	VOUTD15	I/O	Multiple function: (1) Video out 16-bit 422 mode: Y7 (2) SPDIF input data (3) 3th RS232 RX (4) Slave I2C data (5) External Interrupt 4 (6) Ethernet Link LED (7) NAND Flash write enable (8) GPIO
HDMI TX			
C16	AVDD12_HDMI_C	Power	1.2V Analog Power
C15	AVDD12_HDMI_D	Power	1.2V Analog Power
D14	AVDD33_HDMI	Power	3.3V Analog Power
E14	AVSS33_HDMI	Ground	Analog Ground
A15	CH0_M	Analog	HDMI TX data 0 differential pair (M)
B15	CH0_P	Analog	HDMI TX data 0 differential pair (P)
A14	CH1_M	Analog	HDMI TX data 1 differential pair (M)
B14	CH1_P	Analog	HDMI TX data 1 differential pair (P)
A13	CH2_M	Analog	HDMI TX data 2 differential pair (M)
B13	CH2_P	Analog	HDMI TX data 2 differential pair (P)
A16	CLK_M	Analog	HDMI TX clock differential pair (M)
B16	CLK_P	Analog	HDMI TX clock differential pair (P)
NAND Flash Interface			
AC6	NFALE	I/O	Multiple function: (1) NAND Flash address latch enable (2) GPO
AD4	NFCEN	I/O	Multiple function: (1) NAND Flash chip enable (2) GPO
AE5	NFCEN2	I/O	Multiple function: (1) NAND Flash 2nd chip enable (2) 2nd RS232 TX (3) External interrupt 2 (4) 3th RS232 TX (5) Slave I2C clock (6) PWM control signal output (7) GPO
AD5	NFCLE	I/O	Multiple function: (1) NAND Flash command latch enable (2) GPO

AC3	NFD0	I/O	Multiple function: (1) NAND Flash Data input/output bit 0 (2) GPIO
AE2	NFD1	I/O	Multiple function: (1) NAND Flash Data input/output bit 1 (2) GPIO
AD2	NFD2	I/O	Multiple function: (1) NAND Flash Data input/output bit 2 (2) GPIO
AE1	NFD3	I/O	Multiple function: (1) NAND Flash Data input/output bit3 (2) GPIO
AC2	NFD4	I/O	Multiple function: (1) NAND Flash Data input/output bit4 (2) GPIO
AD1	NFD5	I/O	Multiple function: (1) NAND Flash Data input/output bit5 (2) GPIO
AB3	NFD6	I/O	Multiple function: (1) NAND Flash Data input/output bit6 (2) GPIO
AC1	NFD7	I/O	Multiple function: (1) NAND Flash Data input/output bit7 (2) GPIO
AD3	NFRBN	I/O	Multiple function: (1) NAND Flash ready/busy (2) GPIO
AE3	NFRBN2	I/O	Multiple function: (1) NAND Flash 2nd ready/busy (2) 2nd RS232 RX (3) External interrupt 1 (4) 3th RS232 RX (5) Slave I2C data (6) PWM control signal output (7) GPO
AE4	NFREN	I/O	Multiple function: (1) NAND Flash read enable (2) GPO
AD6	NFWEN	I/O	Multiple function: (1) NAND Flash write enable (2) GPO
Dram Channel			
AA25	RA0	O	Memory address bit 0
U21	RA1	O	Memory address bit 1
AB25	RA2	O	Memory address bit 2
AA23	RA3	O	Memory address bit 3
W21	RA4	O	Memory address bit 4
AA24	RA5	O	Memory address bit 5
W22	RA6	O	Memory address bit 6
AB24	RA7	O	Memory address bit 7
W20	RA8	O	Memory address bit 8
AC24	RA9	O	Memory address bit 9
AD23	RA10	O	Memory address bit 10
V22	RA11	O	Memory address bit 11
AA20	RA12	O	Memory address bit 12
AD25	RA13	O	Memory address bit 13
Y24	RBA0	O	Memory bank address bit 0
AE24	RBA1	O	Memory bank address bit 1
AD24	RBA2	O	Memory bank address bit 2
AC22	RCAS_	O	Memory column address strobe
AE23	RCKE	O	Memory clock enable
H24	RCLK0	O	Memory clock 0 positive
H25	RCLK0_	O	Memory clock 0 negative
Y23	RCS_	O	Memory chip select
V24	RDQ0	I/O	Memory data bit 0
V23	RDQ1	I/O	Memory data bit 1
U25	RDQ2	I/O	Memory data bit 2
U23	RDQ3	I/O	Memory data bit 3
K22	RDQ4	I/O	Memory data bit 4
J23	RDQ5	I/O	Memory data bit 5
K23	RDQ6	I/O	Memory data bit 6
J24	RDQ7	I/O	Memory data bit 7
T23	RDQ8	I/O	Memory data bit 8

T22	RDQ9	I/O	Memory data bit 9
R24	RDQ10	I/O	Memory data bit 10
T24	RDQ11	I/O	Memory data bit 11
M24	RDQ12	I/O	Memory data bit 12
L23	RDQ13	I/O	Memory data bit 13
L22	RDQ14	I/O	Memory data bit 14
M23	RDQ15	I/O	Memory data bit 15
R23	RDQM0	O	Memory data mask bit 0
R22	RDQM1	O	Memory data mask bit 1
P24	RDQS0	I/O	Memory positive data strobe bit 0
P25	RDQS0_	I/O	Memory negative data strobe bit 0
N25	RDQS1	I/O	Memory positive data strobe bit 1
N24	RDQS1_	I/O	Memory negative data strobe bit 1
W24	RODT	O	Memory on die termination enable
W25	RRAS	O	Memory row address strobe
T19	RVREF0	I	Memory VREF
AE25	RWE	O	Memory write enable
AC25	RRESET	O	Memory reset
DRAM Channel B			
AC10	RA0_B	O	Memory address bit 0
Y10	RA1_B	O	Memory address bit 1
AE8	RA2_B	O	Memory address bit 2
AB10	RA3_B	O	Memory address bit 3
AA10	RA4_B	O	Memory address bit 4
AC8	RA5_B	O	Memory address bit 5
AA8	RA6_B	O	Memory address bit 6
AD8	RA7_B	O	Memory address bit 7
W10	RA8_B	O	Memory address bit 8
AD7	RA9_B	O	Memory address bit 9
AB6	RA10_B	O	Memory address bit 10
W12	RA11_B	O	Memory address bit 11
Y8	RA12_B	O	Memory address bit 12
AB11	RA13_B	O	Memory address bit 13
AB8	RBA0_B	O	Memory bank address bit 0
W8	RBA1_B	O	Memory bank address bit 1
AC11	RBA2_B	O	Memory bank address bit 2
Y12	RCAS_B	O	Memory column address strobe
AA6	RCKE_B	O	Memory clock enable
AD22	RCLK0_B	O	Memory clock 0 positive
AE22	RCLK0__B	O	Memory clock 0 negative
AE10	RCS__B	O	Memory chip select
AC12	RDQ0_B	I/O	Memory data bit 0
AC13	RDQ1_B	I/O	Memory data bit 1
AD13	RDQ2_B	I/O	Memory data bit 2
AE13	RDQ3_B	I/O	Memory data bit 3
AD21	RDQ4_B	I/O	Memory data bit 4
AC21	RDQ5_B	I/O	Memory data bit 5
AD20	RDQ6_B	I/O	Memory data bit 6
AC20	RDQ7_B	I/O	Memory data bit 7
AC15	RDQ8_B	I/O	Memory data bit 8
AC16	RDQ9_B	I/O	Memory data bit 9
AB15	RDQ10_B	I/O	Memory data bit 10
AB14	RDQ11_B	I/O	Memory data bit 11
AC19	RDQ12_B	I/O	Memory data bit 12
AE18	RDQ13_B	I/O	Memory data bit 13
AE19	RDQ14_B	I/O	Memory data bit 14
AD18	RDQ15_B	I/O	Memory data bit 15
AB16	RDQM0_B	O	Memory data mask bit 0
AA15	RDQM1_B	O	Memory data mask bit 1
AD16	RDQS0_B	I/O	Memory positive data strobe bit 0
AE16	RDQS0_B	I/O	Memory negative data strobe bit 0
AD17	RDQS1_B	I/O	Memory positive data strobe bit 1
AC17	RDQS1__B	I/O	Memory negative data strobe bit 1
AD10	RODT_B	O	Memory on die termination enable
AE11	RRAS__B	O	Memory row address strobe
Y18	RVREF0_B	I	Memory VREF
AA12	RWE__B	O	Memory write enable
AE7	RRESET_B	O	Memory reset
MISC			
A19	CEC	I/O, 5V	Multiple function: (1) HDMI CEC (2) GPIO (3) JTAG ICE data in
D20	GPIO0	I/O, 5V	Multiple function: (1) Serial interface control line (2) Slave I2C clock (3) External Interrupt 3 (4) GPIO

E18	GPIO1	I/O, 5V	Multiple function: (1) Serial interface data line (2) Slave I2C clock (3) External Interrupt 3 (4) GPIO
C22	GPIO2	I/O, 5V	Multiple function: (1) Video output DE signal (2) 2nd RS232 TX (3) External Interrupt 1 (4) Slave I2C clock (5) PWM control signal output (6) Ethernet Speed LED (7) GPIO
AA5	GPIO3	I/O, 5V	Multiple function: (1) Audio line input data (2) 2nd RS232 RX (3) External Interrrupt 2 (4) Slave I2C clock (5) PWM control signal output (6) Ethernet Link LED (7) GPIO
AA4	GPIO4	I/O, 5V	Multiple function: (1) Microphone input data (2) 2nd RS232 TX (3) External Interrupt 4 (4) Slave I2C clock (5) PWM control signal output (6) Ethernet Activity LED (7) GPIO
AB1	GPIO5	I/O, 5V	Multiple function: (1) Microphone left-right clock (2) 2nd RS232 RX (3) External Interrupt 1 (4) Slave I2C data (5) PWM control signal output (6) Ethernet Duplex LED (7) GPIO
AB2	GPIO6	I/O, 5V	Multiple function: (1) Microphone input bit clock (2) 3th RS232 TX (3) External Interrupt 2 (4) Slave I2C clock (5) PWM control signal output (6) Ethernet Speed LED (7) GPIO
Y6	GPIO7	I/O, 5V	Multiple function: (1) Microphone input master clock (2) 3th RS232 RX (3) External Interrupt 4 (4) Slave I2C data (5) PWM control signal output (6) Ethernet Link LED (7) GPIO
B20	HDMISCK	I/O, 5V	Multiple function: (1) HDMI I2C Clock (2) GPIO (2) JTAG ICE clock
B19	HDMISD	I/O, 5V	Multiple function: (1) HDMI I2C Data (2) GPIO (3) JTAG ICE mode select
C20	HTPLG	I/O, 5V	Multiple function: (1) HDMI Hot Plug (2) GPIO (3) JTAG ICE data out
B22	IR	I/O, 5V	Multiple function: (1) Infrared input (2) GPIO
D22	LCDRD	I/O, 5V	Multiple function: (1) LCD read strobe (2) GPIO
E6	RSTI	I	Front-End Power on reset

K24	OPWRSB	I/O, 5V	Power Control
A21	RESET_	I, 5V	Power on reset
F19	UARXD	I/O, 5V	Reserved for debug-only Uart pins (1) 1st RS232 RX (2) T8032 RS232 RX
E20	UATXD	I/O, 5V	Reserved for debug-only Uart pins (1) 1st RS232 TX (2) T8032 RS232 TX
A22	VCLK	I/O, 5V	Multiple function: (1) VFD clock (2) GPIO (3) Slave I2C data (4) Serial interface data line
A23	VDATA	I/O, 5V	Multiple function: (1) VFD data (2) GPIO (4) External Interrupt 3
B23	VSTB	I/O, 5V	Multiple function: (1) VFD strobe (2) GPIO (3) Slave I2C clock (4) Serial interface slave control line
AA1	SCL	I/O, 5V	Multiple function: (1) Serial interface control line (2) Slave I2C clock (3) GPIO
AA2	SDA	I/O, 5V	Multiple function: (1) Serial interface data line (3) Slave I2C data (4) GPIO
USB			
AA3	AVDD33_USB	Power	3.3V Analog power for USB
W4	AVSS33_USB	Ground	Analog ground for USB
W2	USB_DM_P0	Analog	USB port0 differential serial data bus (minus)
W1	USB_DP_P0	Analog	USB port0 differential serial data bus (plus)
Y2	USB_DM_P1	Analog	USB port1 differential serial data bus (minus)
Y1	USB_DP_P1	Analog	USB port1 differential serial data bus (plus)
V2	USB_DM_P2	Analog	USB port2 differential serial data bus (minus)
V1	USB_DP_P2	Analog	USB port2 differential serial data bus (plus)
U3	USB_VRT	Analog	USB reference resistor
E-fuse			
W7	EFPWRQ	Power	2.5V power for E-fuse programming
Ethernet PHY			
G9	AVDD33_LD	Power	Line driver 3.3V analog power
F9	AVDD33_COM	Power	PLL/BG 3.3V analog power
F13	AVSS33_LD	Ground	Line driver analog ground
E9	AVSS33_PLL	Ground	PLL/BG analog ground
G11	AVDD12_REC	Power	ADC analog power
F11	AVSS12_REC	Ground	ADC analog ground
B5	TXVP_0	Analog	Ethernet TD+
B6	TXVP_1	Analog	Ethernet RD+
A5	TXVN_0	Analog	Ethernet TD-
B7	REXT	Analog	External reference resistor
A6	TXVN_1	Analog	Ethernet RD-
SERVO			
F6	AGND33_1	Analog Ground	Analog Ground
K7	AGND33_2	Analog Ground	Analog Ground
F7	AGND33_3	Analog Ground	Analog Ground
H5	AGND12_1	Analog Ground	Analog Ground
H7	AGND12_2	Analog Ground	Analog Ground
F5	AUX	Analog I/O	Auxiliary Input Alternative Function : Signal Monitoring
K5	AVDD12_1	Analog Power(1.2V)	Power Pin
J4	AVDD12_2	Analog Power(1.2V)	Power Pin
E3	AGND33_1	Analog Power(3.3V)	Power Pin
J6	AGND33_3	Analog Power(3.3V)	Power Pin
L4	FECFREQ	3.3V LVTTL I/O 5V-tolerence, Slow slew, 2,4,6,8mA PDR, 75K pull-up (3.3V)	Frequency selection signal output, or LDD serial interface data or I2C SDA. The pin is spike-free at power-on stage

L3	FECMOD	3.3V LVTTL I/O, 5V-tolerance, Slow slew, 2, 4, 6, 8mA PDR, 75K pull-down (0V)	High frequency modulation mode selection signal output, or LDD serial interface command enable. The pin is spike-free at power-on stage.
P3	FEDMO	Analog Output	Disk motor control output. DAC output.
T1	FEEJECT_	3.3V LVTTL I/O, 5V-tolerance, 6 mA PDR, 75K pull-up (3.3V)	Eject/stop key input, active low. The pin is spike-free at poweron stage. Alternate function : General IO.
R1	FEFG	3.3V LVTTL I/O, 5V-tolerance, 6 mA PDR, 75K pull-up (3.3V)	Motor Hall sensor input. The pin is spike-free at power-on stage.
N1	FEFMO	Analog Output	Feed motor 1 control. DAC output.
N2	FEFMO2	Analog Output	Feed motor 2 control. DAC output.
N3	FEFMO3	Analog I/O	Feed motor 3 control. DAC output. Alternative Function : Auxiliary servo input
M3	FEFMO4	Analog I/O	Feed motor 4 control. DAC output. Alternative Function : Auxiliary servo input
H4	FOO	Analog Output	Focus servo output. PDM output of focus servo compensator.
A3	FPDOCD	Analog Input	Laser Power Monitor Input for CD APC / Differential negative input
C4	FPDODVD	Analog Input	Laser Power Monitor Input for DVD APC / Differential positive input
L2	FEGAINSW1	Analog Output	Read gain switch. 1
M2	FEGAINSW2	Analog Output	Read gain switch 2.
L1	FEGAINSW3	Analog Output	Read gain switch 3.
R2	FEGIO0	3.3V LVTTL I/O, 5V-tolerance, 2,4,6,8 mA PDR, 75K pulldown (0V)	LDD serial interface data. The pin is spike-free at power-on stage. The pin is not allowed to pull-up in circuit layout. Alternate function: 1. Internal monitored signal output 2. General IO
R3	FEGIO1	3.3V LVTTL I/O, 5V-tolerance, 2,4,6,8 mA PDR,75K pulldown (0V)	LDD serial interface CLK. The pin is spike-free at power-on stage. The pin is not allowed to pull-up in circuit layout. Alternate function: 1. Internal monitored signal output 2. General IO
T3	FEGIO10	3.3V LVTTL I/O, 5V-tolerance, 2,4,6,8 mA PDR, 75K pull-up (3.3V)	PC RS232 serial receive data. The pin is spike-free at poweron stage Alternate function: 1. High speed serial output port. (CLOCK) 2. Internal monitored signal output 3. LED Control Output. Initial “0” Output 4. General IO.
U1	FEGIO11	3.3V LVTTL I/O, 5V-tolerance, 2,4,6,8 mA PDR, 75K pull-up (3.3V)	PC RS232 serial transmit data. The pin is spike-free at poweron stage. Alternate function: 1. High speed serial output port (Data) 2. Internal monitored signal output 3. General IO.
U2	FEGIO3	3.3V LVTTL I/O, 5V-tolerance, 2,4,6,8 mA PDR, 75K pull-down (0V)	LED Control Output. Initial 0 Output. The pin is spike-free at power-on stage. Alternate function : . 1. Internal monitored signal output 2. General IO
R6	FEGIO4	Analog Output	Read gain switch 4 Alternate function : 1. LCD serial interface command enable. 2. LCD_DRV: Square wave output for LCD control. 3. Internal monitored signal output 4. General IO.
N5	FEGIO5	Analog Output	Read gain switch 5 Alternate function : 1. SIDM 2. LCD serial interface command enable. 3. Internal monitored signal output 4. General IO.
N7	FEGIO6	Analog Output	Read/Write gain switch 6. The pin is not allowed to pull-up in circuit layout. Alternate function : 1. SIDM 2. LCD serial interface command enable. 3. Internal monitored signal output 4. General IO.

N6	FEGIO7	3.3V LVTTL I/O, 5V-tolerance, 2,4,6,8 mA PDR, 75K pull-down (0V)	General IO. The pin is spike-free at power-on stage. The pin is not allowed to pull-up in circuit layout.
R5	FEGIO9	3.3V LVTTL I/O, 5V-tolerance, 2,4,6,8 mA PDR, 75K pull-down (0V)	General IO. The pin is spike-free at power-on stage. Alternate function : 1. Internal monitored signal output 2. Spoke input. 3. Power on reset input, high active. 4. General IO.
E4	HAVC	Analog Output	Decoupling Pin for Reference Voltage of Main and Sub Beams
C3	INA	Analog Input	Input of Main Beam Signal (A)
B1	INB	Analog Input	Input of Main Beam Signal (B)
C2	INC	Analog Input	Input of Main Beam Signal (C)
C1	IND	Analog Input	Input of Main Beam Signal (D)
E2	INE	Analog Input	Input of Sub-Beam Signal (E)
E1	INF	Analog Input	Input of Sub-Beam Signal (F)
D1	ING	Analog Input	Input of Sub-Beam Signal (G)
D2	INH	Analog Input	Input of Sub-Beam Signal (H)
F4	MPXOUT1	Analog Output	Multiplexer Output 1 for Signal Monitoring. The pin is not allowed to pull-up in circuit layout. Alternate function: Internal monitored signal output / General output.
F2	MPXOUT2	Analog Output	Multiplexer Output 2 for Signal Monitoring. The pin is not allowed to pull-up in circuit layout. Alternate function: Internal monitored signal output / General output.
F1	MPXOUT3	Analog Output	Multiplexer Output 3 for Signal Monitoring. The pin is not allowed to pull-up in circuit layout. Alternate function : Internal monitored signal output / General output.
K3	FEOSCEN	3.3V LVTTL I/O, 5V-tolerance, Slow slew, 2, 4, 6, 8mA PDR, 75K pull-up (3.3V)	High frequency modulation enable signal output, or LDD serial interface CLK or I2C SCL. The pin is spike-free at power-on stage
G2	RFIN	Analog Input	Differential Input of AC Coupling RF SUM Signal (Negative)
H2	RFIN2	Analog Input	Differential Input of AC Coupling RF SUM Signal (Negative)
G11	RFIP	Analog Input	Differential Input of AC Coupling RF SUM Signal (Positive)
H1	RFIP2	Analog Input	Differential Input of AC Coupling RF SUM Signal (Positive)
J3	TLO	Analog Output	Tilt servo output
T2	FETRAYIN_	3.3V LVTTL I/O, 5V-tolerance, Slow slew, 2, 4, 6, 8mA PDR, 75K pull-up (3.3V)	Tray_is_in Input, A Logical Low Indicates the Tray is IN. Feedback Flag is from Tray Connector. The pin is spike-free at power-on stage
U4	FETRAYOUT__	3.3V LVTTL I/O, 5V-tolerance, Slow slew, 2, 4, 6, 8mA PDR, 75K pull-up (3.3V)	Tray_is _out input. A Logical Low Indicates the Tray is OUT. Feedback Flag is from Tray Connector. The pin is spike-free at power-on stage Alrenate function: General IO
P2	FETRAYPWM	Analog Output	Tray DAC/PWM contol output. Controlled by up.
A2	TRINA	Analog Input	Input of Tracking Signal (A)
B3	TRINB	Analog Input	Input of Tracking Signal (B)
A1	TRINC	Analog Output	Input of Tracking Signal (C)
B2	TRIND	Analog Output	Input of Tracking Signal (D)
J2	TRO	Analog Output	Tracking servo output. PDM output of tracking servo compensator
H3	V14	Analog Output	Output of Voltage Reference (1.4V)
E5	VDAC0	Analog Output	Output of General DAC
B4	FVREF	Analog Output	Output Voltage Reference
C6	VWDC2O	Analog Output	Output Voltage 2 of Laser Diode Control on APC
A4	VWDC3O	Analog Output	Output Voltage 3 of Laser Diode Control on APC

■ Enter Service Mode

[OPTION 1]
The set disconnect AC, and Push front panel key ([OPEN/CLOSE] + [PLAY] + [STOP]) and AC IN
The keys will be released if the screen in service mode is displayed on a monitor.
Control via Remote Controller

[OPTION 2]
Connect the set to AC, and wait initialization cycle complete . POWER ON SET INTO NORMAL MODE. WHEN CROSS MEDIA BAR APPEAR.
Use Sony BDP remote controller, key in the following SIRCS code.
[DISPLAY] -> [0] -> [2] -> [1] -> [SUBTITLE]
While sending of SIRCS code, wait time between each key code could not send later then 3 second.
If 3 second waiting is exceeded user have to re-key in the SIRCS code.
If SIRCS enter is successful, set will auto boot up. The screen of service mode is
displayed on a monitor.
Control via Remote Controller

■ Diag
The unit test of the device mounted on the MainBoard.

■ Display Error Log
Error log is displayed.
The displayed logs can be saved in a USB memory.

■ Factory Initialize
Return all of the player setting to their factory defaults.

■ Network
Confirm Wired Network connection.

■ Version Up
The set updates by Update DISC.

■ System Information
System information of the set is displayed.
The Information on a soft version and drive information, etc. is displayed.

■ EMC Test Mode
Not used.

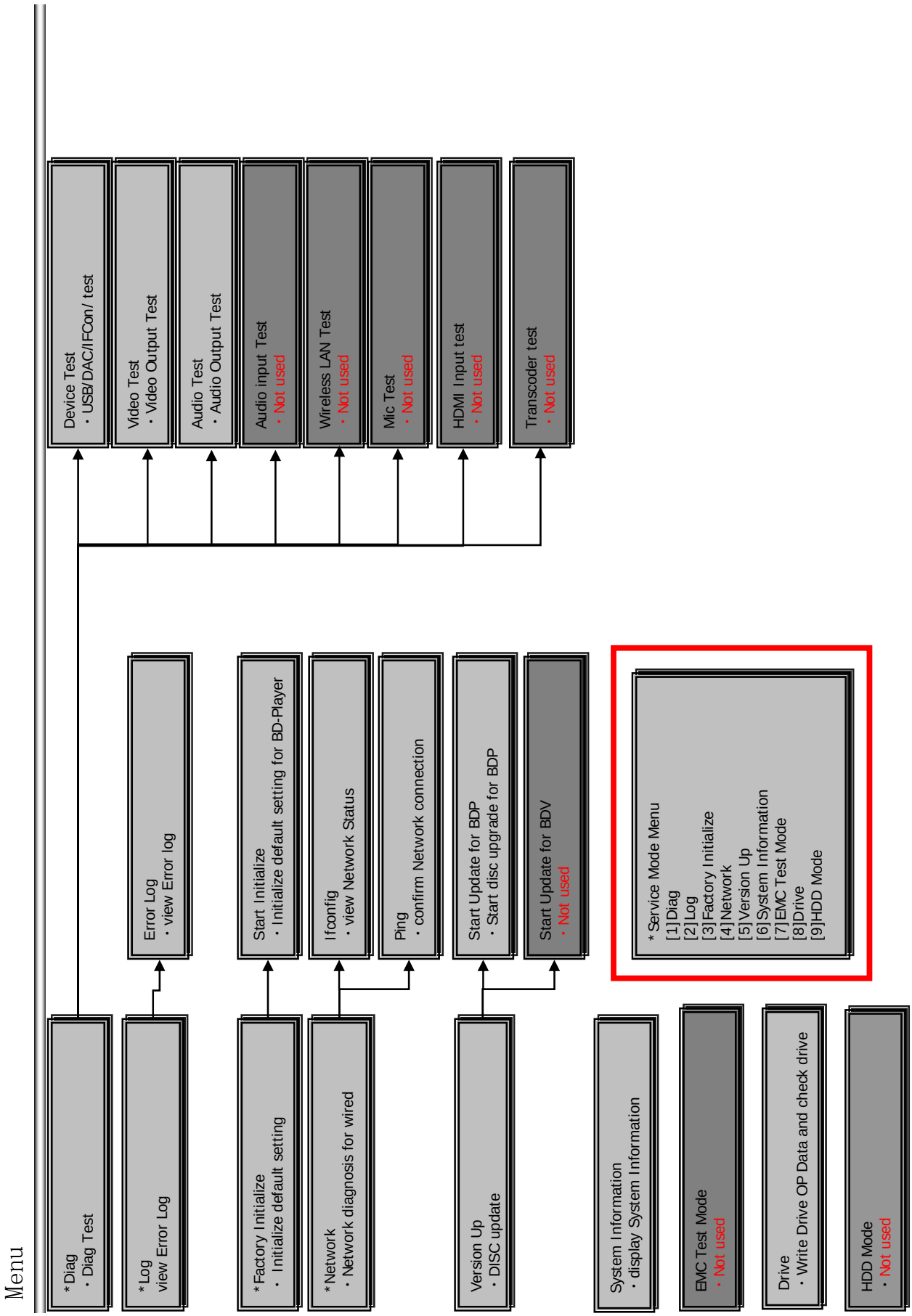
■ Drive
Write Drive OP Data and check drive.

■ HDD Mode
Not used.

Function Support List

Service Mode Menu (Top)		category		Device		BDP6.9G Comment
1	Diag	1	Device Test	1	USB	√ (FRONT ONLY)
				2	D/A Converter	√
				3	IFCON	
					*FDP all ON	X
					*Show Strings	X
					*LED Sequantial ON	√
					*Fan Control ON	X
				4	MIC	X
				5	MFI	X
				6	IPC	X
				7	External HDMI	X
				8	Transcoder	X
		2	Video Test			√
		3	Audio Output Test			√
		4	Audio Input Test			X
		5	Wireless LAN Test			X
		6	Mic Test			X
		7	HDMI Input Test			X
		8	Transcoder Test			X
2	Log	1	Error Log			√
		2	HDD Log			X
3	Factory Initialize					√
4	Network					√
5	Version Up					√
6	System Information					√
7	EMC Test Mode					X
8	Drive	1	OP data write			√
		2	Servo Parameter check			SC
		3	Servo Level check			SC
		4	S-curve check			SC
		5	Readability check			SC
		6	OP Position check			SC
		7	OP Check			SC
		8	Load/Eject Aging mode			SC
		9	Spindle control			SC
		10	FA Test mode			SC
9	HDD Mode	1	HDD Info			X
		2	Performance Check			X
		3	ReAuth HDD			X
		4	Format			X
		5	Factory Check			X
		6	Set Replace Board			X
		7	Set Replace HDD			X
		8	HDD Spin Down			X

√	Support
X	Not Support
SC	Special Control

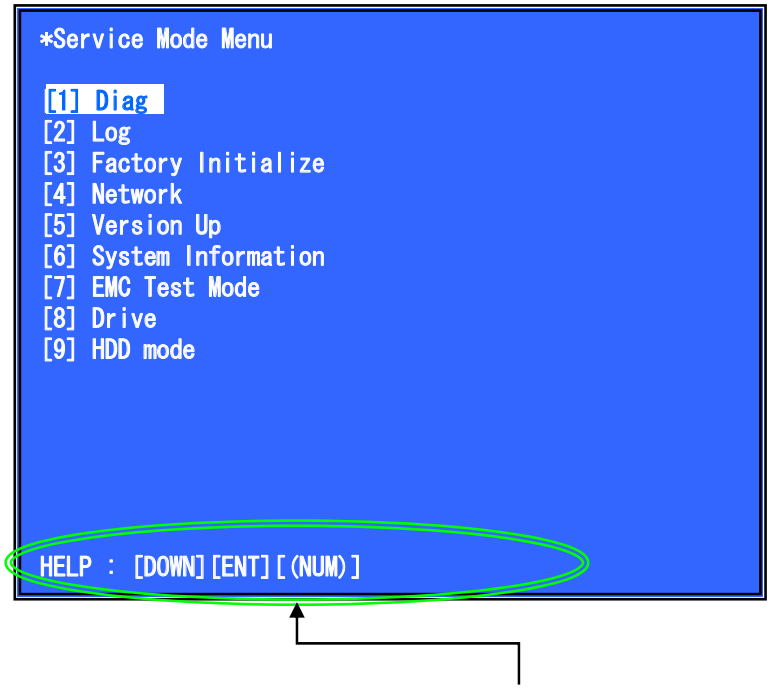

Menu
* Diag
· Diag Test
* Log
view Error Log
* Factory Initialize
· Initialize default setting
* Network
· Network diagnosis for wired
Version Up
· DISC update
System Information
· display System Information
EMC Test Mode
· Not used
Drive
· Write Drive OP Data and check drive
HDD Mode
· Not used
Error Log
· view Error log
Start Initialize
· Initialize default setting for BD-Player
Ifconfig
· view Network Status
Ping
· confirm Network connection
Start Update for BDP
· Start disc upgrade for BDP
Start Update for BDV
· Not used
* Service Mode Menu
[1]Diag
[2]Log
[3]Factory Initialize
[4]Network
[5]Version Up
[6]System Information
[7]EMC Test Mode
[8]Drive
[9]HDD Mode
Device Test
· USB/DAC/IFCon/ test
Video Test
· Video Output Test
Audio Test
· Audio Output Test
Audio input Test
· Not used
Wireless LAN Test
· Not used
Mic Test
· Not used
HDMI Input test
· Not used
Transcoder test
· Not used

Outline :
Service Mode Top Menu
It selects to each function from here.
output HDMI/Component 480p forcibly.

Operation :

[1]	Select and Activate Diag Menu.
[2]	Select and Activate Log Menu,
[3]	Select and Activate Factory Initialize Menu.,
[4]	Select and Activate Network Menu
[5]	Select and Activate Version Up (DISC version Up) Menu,
[6]	Select and Activate System Information Menu.
[7]	Select and Activate EMC Test Mode Menu. (not Used)
[8]	Select and Activate Drive Menu.
[9]	Select and Activate HDD mode. (not Used)
[UP]	Move Up cursor
[DOWN]	Move Down cursor
[ENT]	Activate the selected cursor.

* The cursor is not displayed when initial.



Display Hint
(The key in which the present use is possible)

Outline :
The device carried in the substrate is tested.

(Window 1) Select test category
Operation :

[LEFT] [RIGHT]	Select Category
[DOWN][ENT]	Activate the selected Category.
[RET]	Return to Service Top Menu.

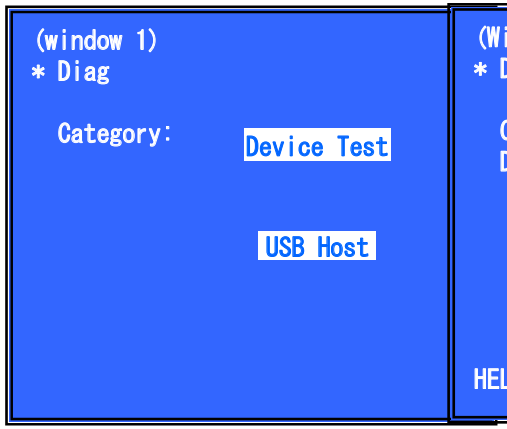
(Window 2) Device Test
After "Device Test" selects in window 1, the device to test is chosen.
Operation:

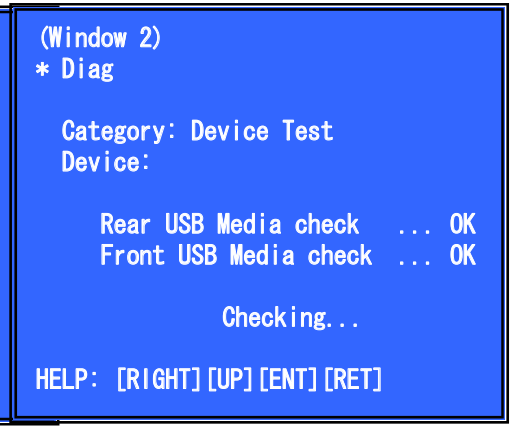
[LEFT][RIGHT]	Select Device
[ENT]	Activate and Start Test
[UP]	Return to test category selection. IF select IFCON, Move Up cursor. (see windows 3)
[DOWN]	IF select IFCON, Move Up cursor. (see windows 3)
[RET]	Return to test category selection.

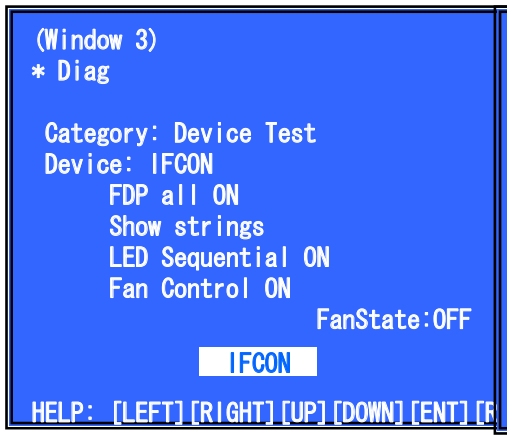
>Test category list
Device Test
Video Test
Audio Test
Audio Input Test (not Used)
Wireless LAN Test (not Used)
Mic Test (not Used)
HDMI Input Test (not Used)
Transcoder Test (not Used)

>Device Test :Device List

USB Host	: USB Media Check (Front only) Only one time.
D/A Converter	: DAC write check (non-verification)
IFCON	: IFCON Test (see windows 3)
FDP all ON	
Show Strings	
LED Sequential	
FAN Control ON	
Fan State (Display)	
MIC	: MIC connect check (see window 4)
MFI	: MFI read/write Check (not used)
IPC	: Device ID check (only used)
External HDMI	: Revision check (only used)
Transcoder	: Revision/Version (not used)







Outline:
Activate Video Test and Audio Test

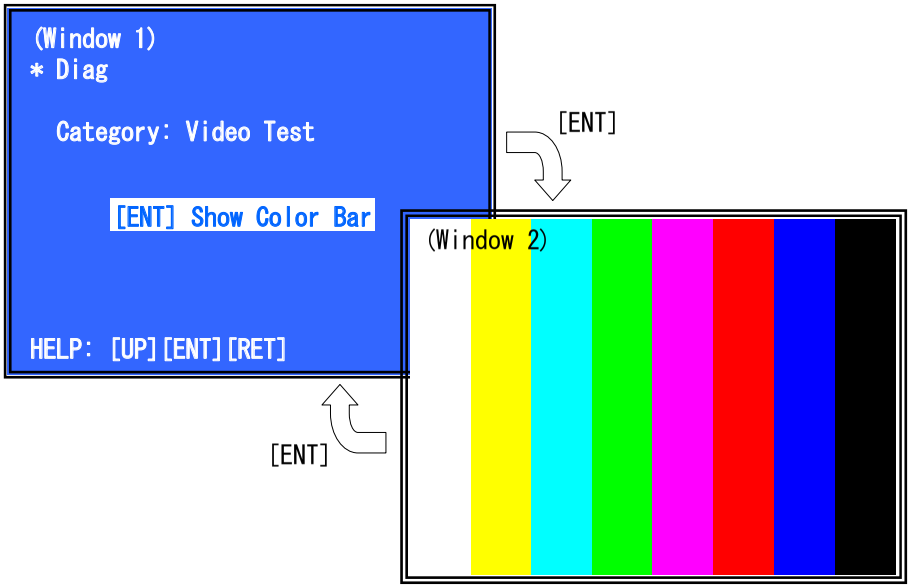
(Window 1)Select Video Test Category
Operation:
[ENT] Activate and display Color Bar
[UP][RET] Return to test category selection.

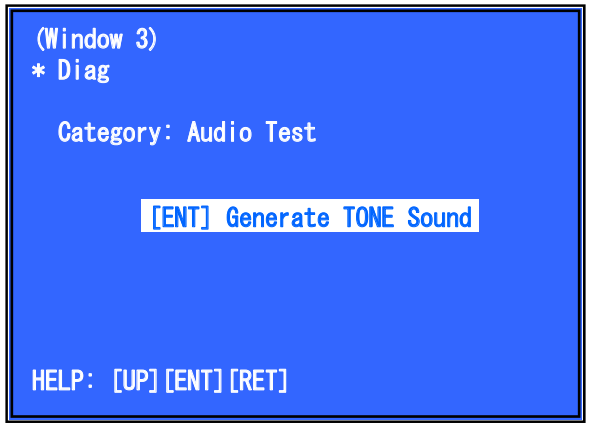
(Window 2)Display Color Bar
Operation :
[ENT] Return to Select Video Test Category.

(Window3) Select Audio Test Category
Operation :
[ENT] Play TONE Sound/Stop
[UP][RET] Return to Select Audio Test Category

>Video Test:
Color Bar output S terminal & composite & Component & HDMI.

>Audio Test;
TONE sound output ineOut(2ch)&/ SPDIF & HDMI.





Outline :
Display each contents of the log,

(Window 1) select log.
Operation :

[1]	Activate and Display Error log
[2]	Activate and Display Command Log
[UP]	Move Up cursor
[DOWN]	Move Down cursor
[ENT]	Activate the selected cursor.
[RET]	Return to Service Top Menu.

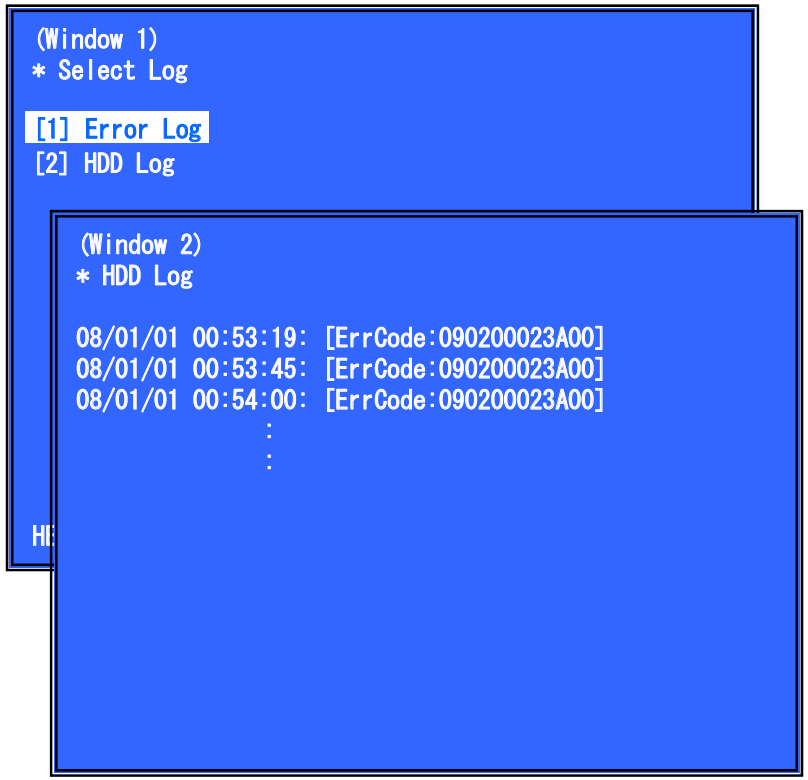
(Window 2) : Display HDD Log . (Not supported)

Operation :

[LEFT]	Next Page
[RIGHT]	Previous Page
[RET]	Return to select log (window 1)
[RED]	Write the contents of an error log on a USB memory.

>Log contents
See P16.

Write the contents of a log on a USB memory
[RED] is pushed where a USB memory is inserted in a set in log display screen.
Error Log:
"HDD_Text" file is outputted in a USB memory.

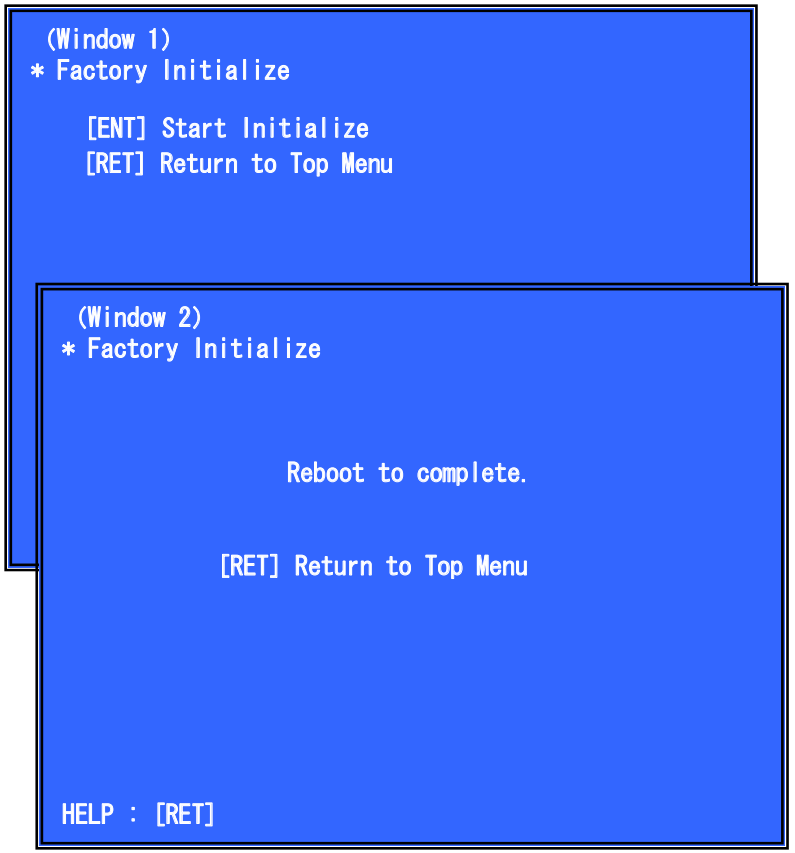


Outline:
Return all of the player setting to their factory defaults.

(Window 1) select initialize.
Operation :
When you return a set to the factory defaults, push [1] on this screen.
[ENT] Start Factory Initialize
[RET] Return to Service Top Menu.

(Window 2)
It is a screen of the end of initialization.
[RET] Return to Service Top Menu.

Please disconnect AC power supply, and connect AC again.
- The operation of other service mode menu can be continued.



Outline :
Network Menu for the wired Ethernet.

(Window1)Ifconfig Test
Operation :

[ENT]	Activate Ifconfig (Display network setting)
[RIGHT]	Select Ping Test.
[RET]	Return to Service Top Menu.

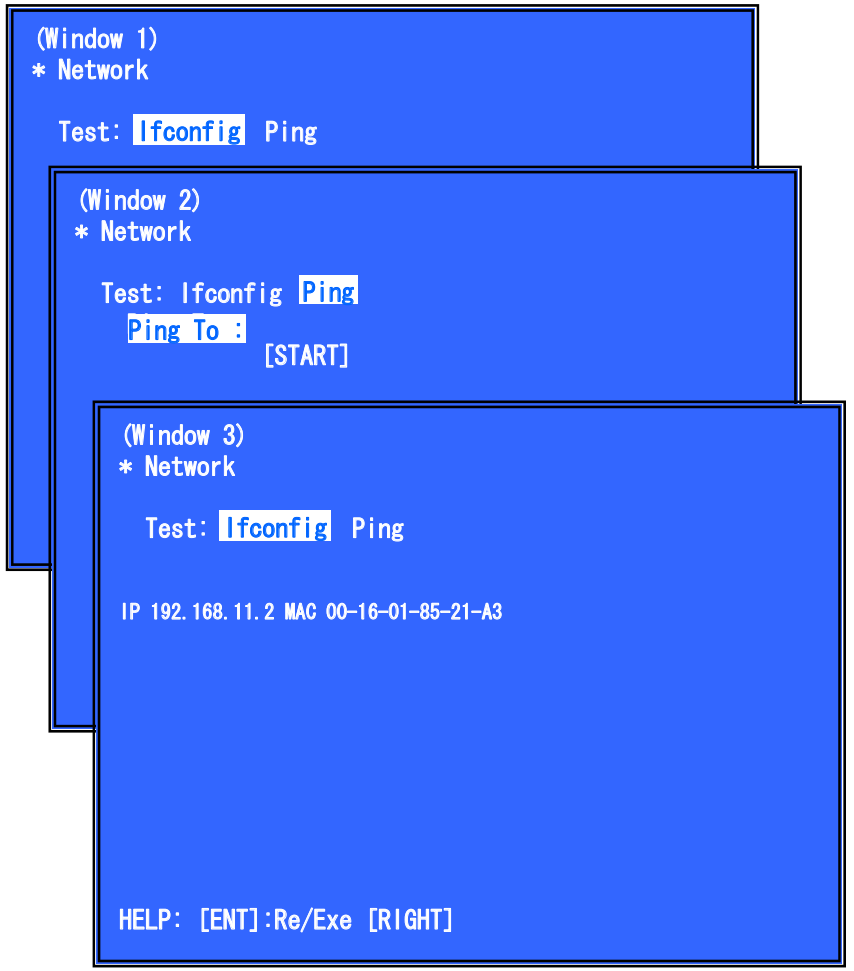
(Window 2)Ping Test
Operation:

[LEFT]	Select Ifconfig Test.
[RET]	Return to Service Top Menu.

(The details of a Ping test are nest page)

(Window 3)Ifconfig Test Active
Display Ifconfig command results.
Operation:

[ENT]	Ifconfig retry
[RIGHT]	Select Ping Test.
[RET]	Return to Service Top Menu.



Outline :
Ping Test for the wired Ethernet.

(Window 1)Ping Test
Operation:

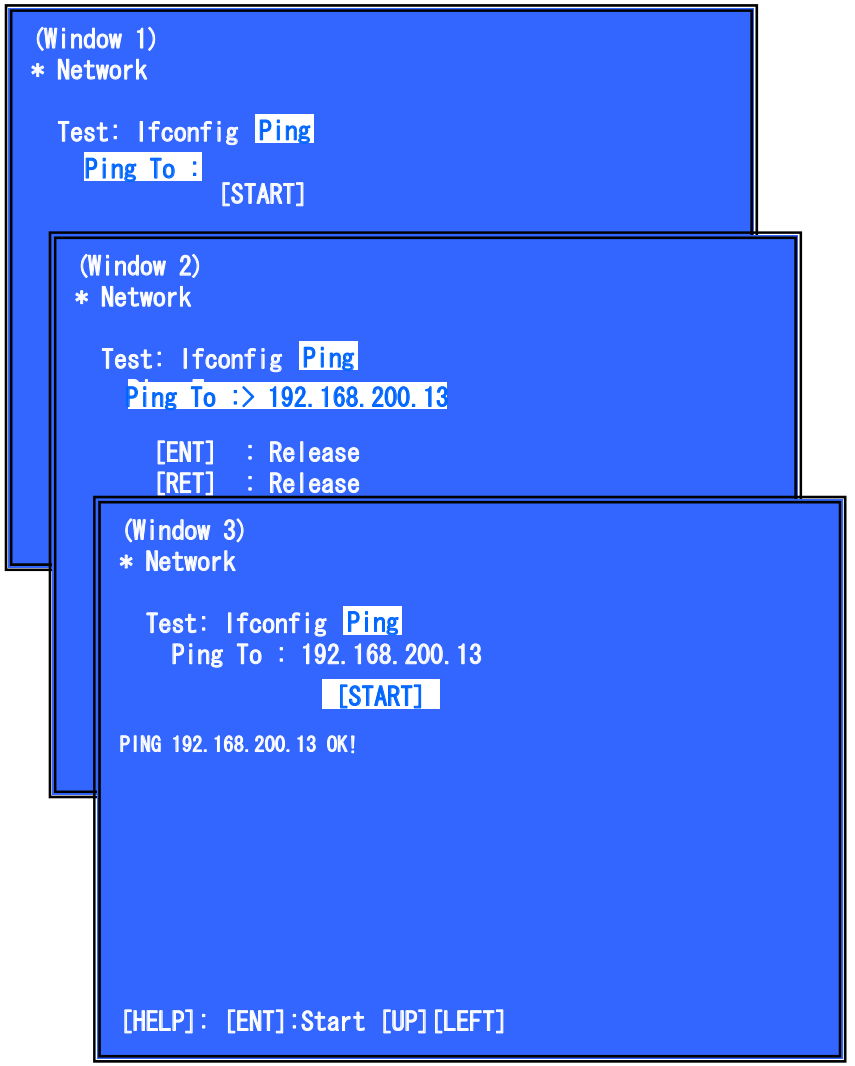
[LEFT]	Select Ifconfig Test.
[DOWN]	Ping execution preparation.
[RET]	Return to Service Top Menu.

(Window 2) The IP address of the Ping point is set up.
(IP address input mode)
When "Ping to :>" is reversed, [ENT] is pushed and IP is inputted.
Operation:

[ENT]	Finish to input.
[RET]	Finish to input.
[LEFT]	Finish to input and Select Ifconfig Test.
[(NUM)]	Input Character sting '0-9'
[TIME]	Input Character sting '.'
[CLEAR]	Backspace

(Windows3): Ping Test Active
When [START] is reversed, [ENT] is pushed and execute ping .
Operation:

[ENT]	Activate Ping Test
[UP]	The IP address of the Ping point is set up.
[RET]	Return to Service Top Menu.



Outline:
update software using DISC

(Window 1)Version Up Menu
Operation:

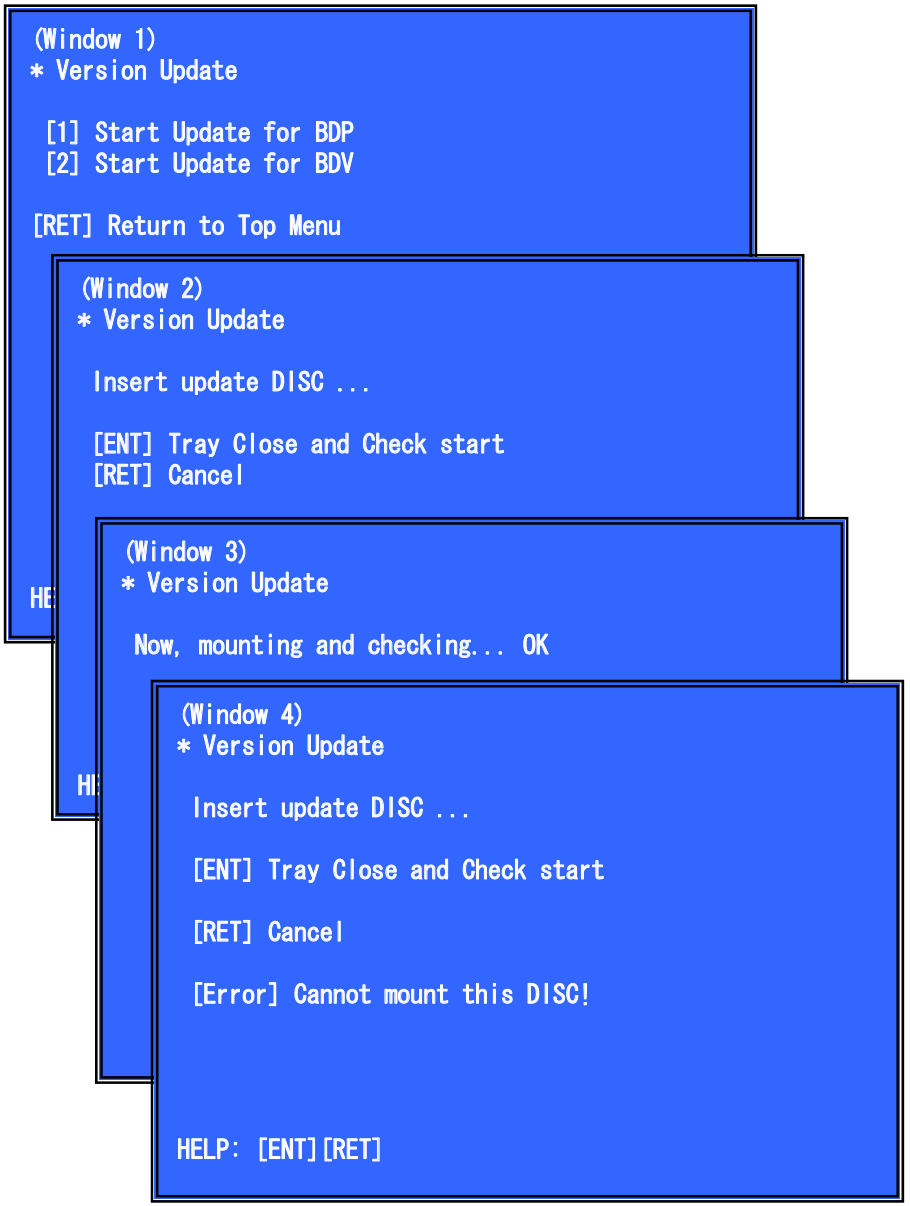
[1]	Start Update for BDP→(Tray Open and go to window 2)
[2]	Start Update for BDV (not used)
[UP]	Move Up cursor
[DOWN]	Move Down cursor
[ENT]	Activate the selected cursor.
[RET]	Return to Service Top Menu.

(Window 2)Place the Update Disc
Operation :

[ENT]	Tray Close and check DISC.
[RET]	Cancel Update (Tray Close and return to window 1)

(Window 3) Disc Check and OK (Right DISC)
Operation: start update sequence automatically and reboot.
After reboot, please open tray and eject Update Disc manually.

(Window 4) Disc Check and NG (not update DISC)
Operation: [Error] ・・・ (error message) and wait.
open tray automatically.



Outline:
Display System Information

(Window 1)Basic Information Menu
Operation:

[RIGHT]	Drive Information (delta IOP of a drive is measured) and Wireless device Information (only wireless model) displayed. (go to window 2)
[RET]	Return to Service Top Menu.

(Window 2)Drive and Wireless Information Menu
Operation:

[LEFT]	Basic Information displayed. (go to window 1)
[RET]	Return to Service Top Menu.

When delta IOP is measured, it becomes impossible to use the Version Up function.

Contents List:

Model	
Destination	
Sequence Number	
MAC	
IP	
IFCON	IFCON Version
Bootloader	Bootloader Version
Host Main	Host Main Version
Host Sub	Host Sub Version
Middleware	Middleware Version

WLAN module Serial	(only wireless model)
WLAN module hw version	(only wireless model)
WLAN module MAC Address	(only wireless model)
Drive	Firm Revision
CD DIOP	Delta IOP
DVD DIOP	Delta IOP
BD DIOP	Delta IOP
CD LD TIME	LD Time
DVD LD TIME	LD Time
BD LD TIME	LD Time

Outline :
Activate Drive test

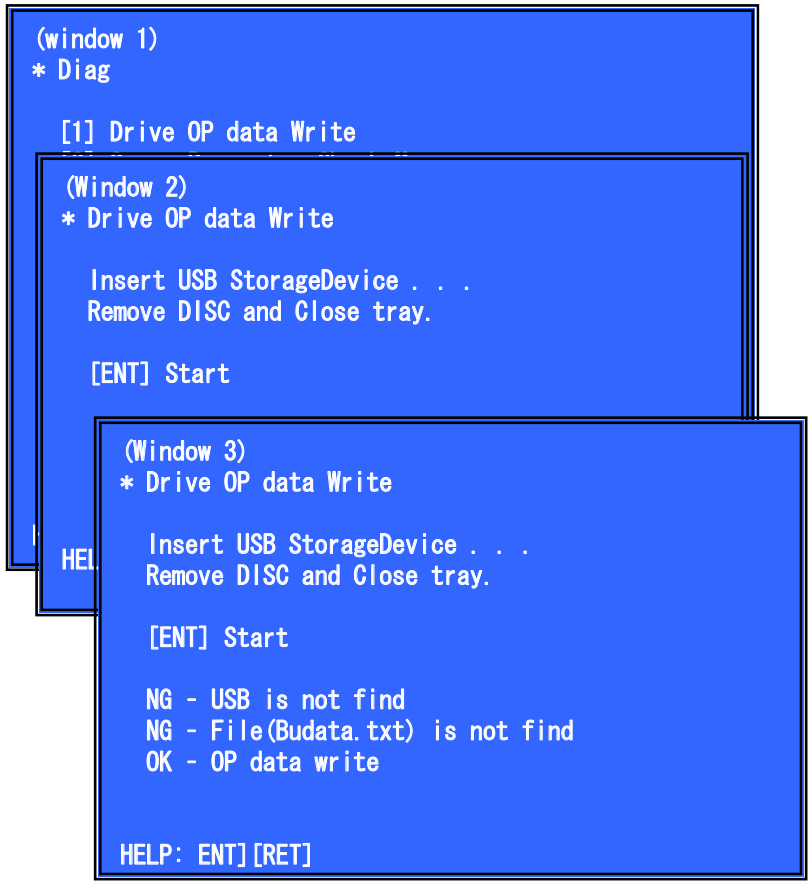
(Window 1) Select Drive test category
Operation :
[LEFT] [RIGHT] Select Category
[DOWN][ENT] Activate the selected Category.
[RET] Return to Service Top Menu.
[1] Drive OP data Write
[2] Servo Parameter Check Menu (Not Used)
[3] Servo Signal Check Menu (Not Used)
[4] S-Curve Check Menu (Not Used)
[5] Readability Check Menu (Not Used)
[6] OP Position Check Menu (Not Used)
[7] OP Check Menu (Not Used)
[8] Load Eject Aging (Not Used)
[9] Spindle Control Check Menu (Not Used)
[10] FA Test Mode (Not Used)

(Window 2) To start OP data Write
Operation :
[ENT] Start

(Window 3) Show OP data Write result
Operation :

NG - USB is not find
NG – File(Budata.txt) is not find
OK – OP data write

> Drive Test:
For drive operating check. Service is only use Drive OP data write to re write OP data after change of new OPU.


(window 1)
* Diag
[1] Drive OP data Write
(Window 2)
* Drive OP data Write
Insert USB StorageDevice . . .
Remove DISC and Close tray.
[ENT] Start
(Window 3)
* Drive OP data Write
Insert USB StorageDevice . . .
Remove DISC and Close tray.
[ENT] Start
NG - USB is not find
NG - File(Budata.txt) is not find
OK - OP data write
HELP: ENT][RET]

Error Log Information

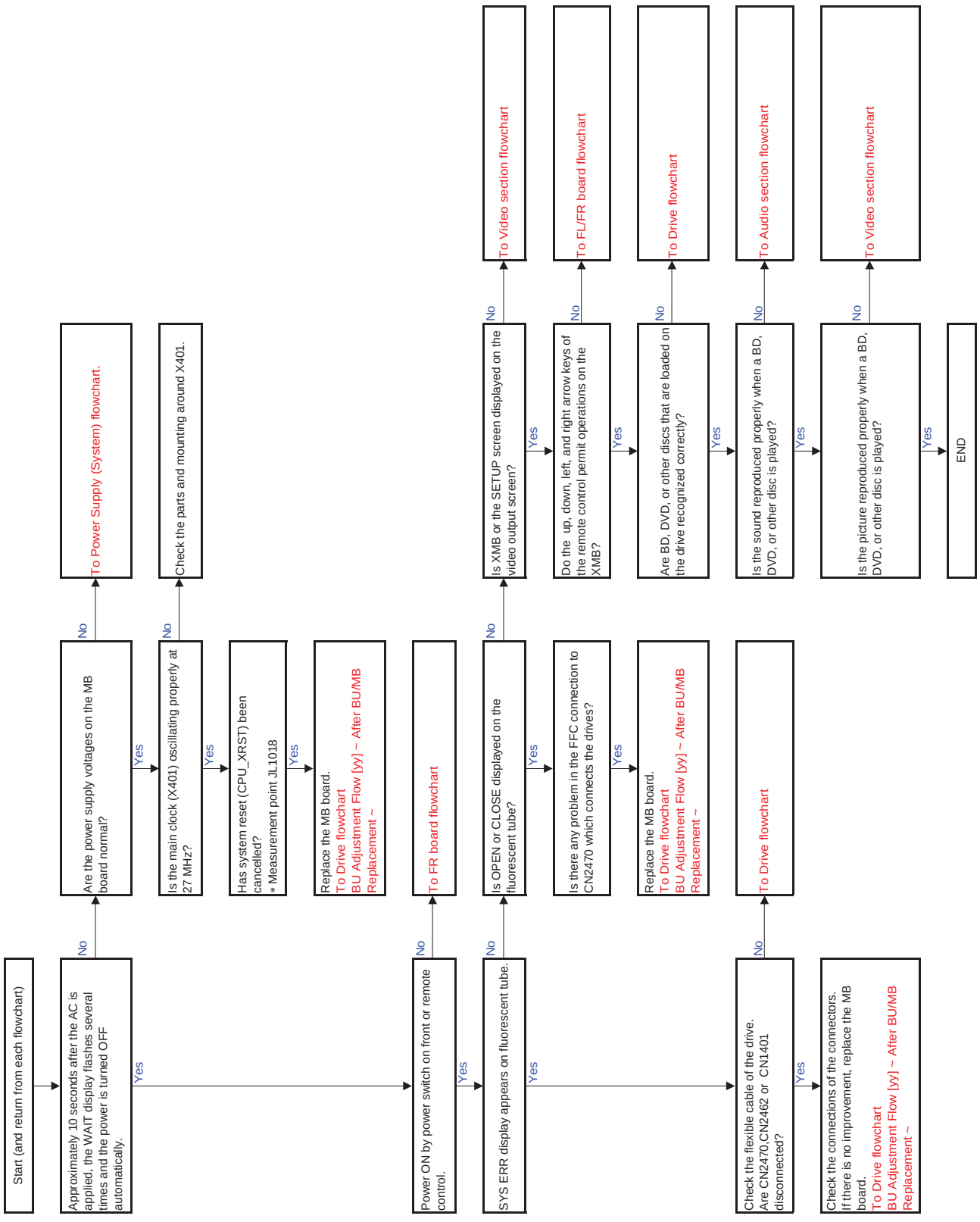
issue	Error LogCode						note
	Category	ErrorCode	ErrorInfo_0	ErrorInfo_1	ErrorInfo_2	ErrorInfo_3	
CXD90007 Error	0x01	0x**					
DDR3 Error	0x02	0x**					
Ifcon transmition time out	0x03	0x01	0x00	0x00	0x00	0x00	No response from Ifcon
Ifcon Error	0x03	0x**					Other Error
NAND Init Fail	0x04	0x00	0x00	0x00	0x00	0x00	NAND initialization failed
NAND Flash read Error	0x04	0x**					Other Error
DRIVE Error	0x06	0x01	Error Code				Cannot detect optical drive
DRIVE Error	0x06	0x02	Error Code				SATA cable disconnected
DRIVE Error	0x06	0x03	SCR Diag Field(Simultaneous error)				SATA IF ERROR
DRIVE Error	0x06	0x**					Other Error
Fan error	0x07	0x01	0x01	0x00	0x00	0x00	Temperature is too high
Fan error	0x07	0x01	0x02	0x00	0x00	0x00	Can not change fan state
Ethernet Error	0x08	0x01	0x00	0x00	0x00	0x00	module initialization error
Ethernet Error	0x08	0x02	0x00	0x00	0x00	0x00	Link Error
MEDIA – OPTICAL DISC	0x09	0x01	Read Error LBA				Disc read error
MEDIA – OPTICAL DISC	0x09	0x02	Cmd	Error Sense Key			Other commands read error
USB media read error	0x0A	0x01	0x1	0x1	0x00	0x00	ErrorInfo_0: LUN number ErrorInfo_1: LBA address
USB media write error	0x0A	0x02	0x1	0x1	0x00	0x00	ErrorInfo_0: LUN number ErrorInfo_1: LBA address
Unsupported USB device	0x0A	0xFF	0x1	0x1	0x1	0x1	ErrorInfo_0: Device Class ErrorInfo_1: bDeviceSubClass ErrorInfo_2: bDeviceProtocol ErrorInfo_3: bNumConfigurations
USB error	0x0A	0x**					Other Error

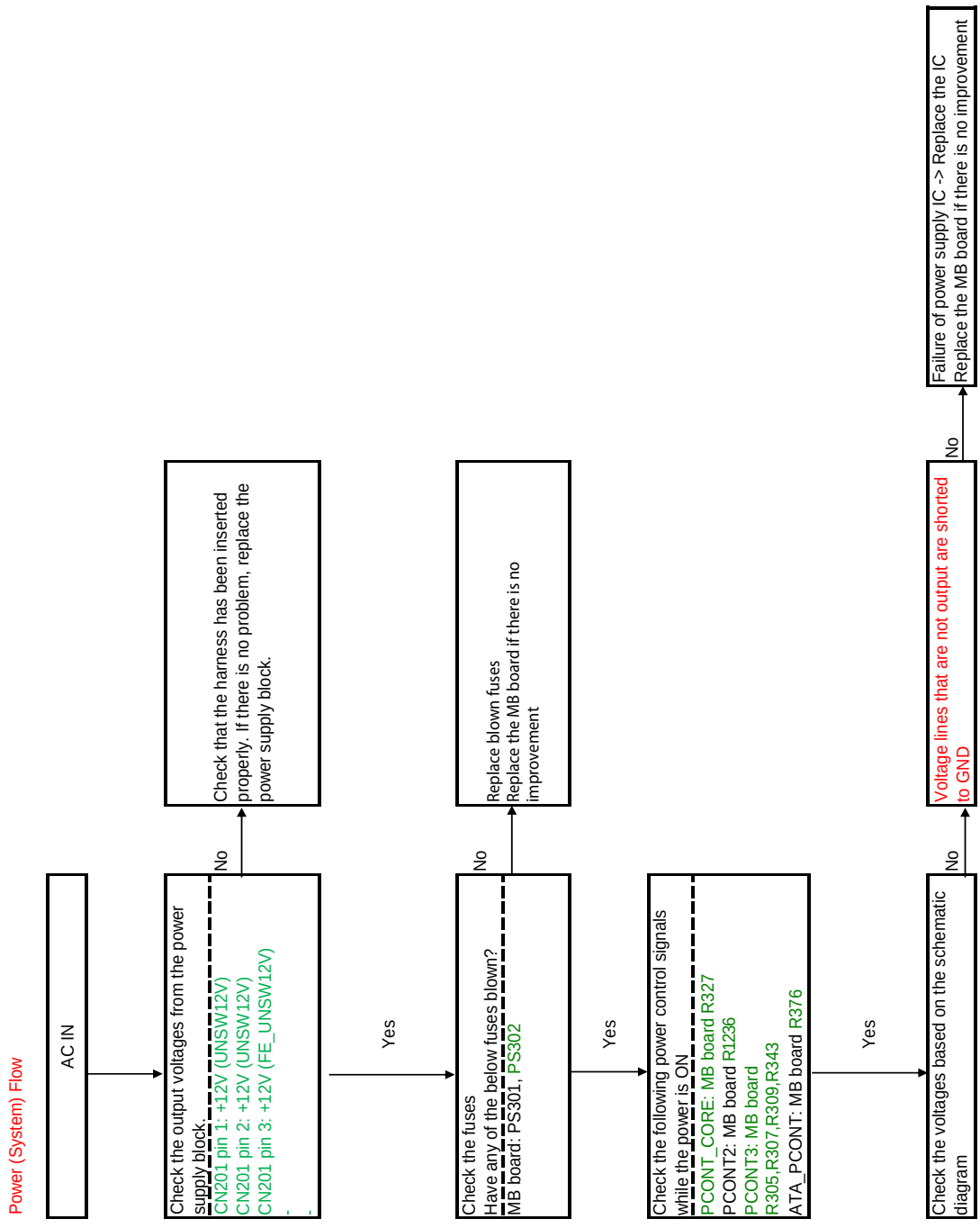
ver 0.10	2011.06.21	Manaka/Kong	First release

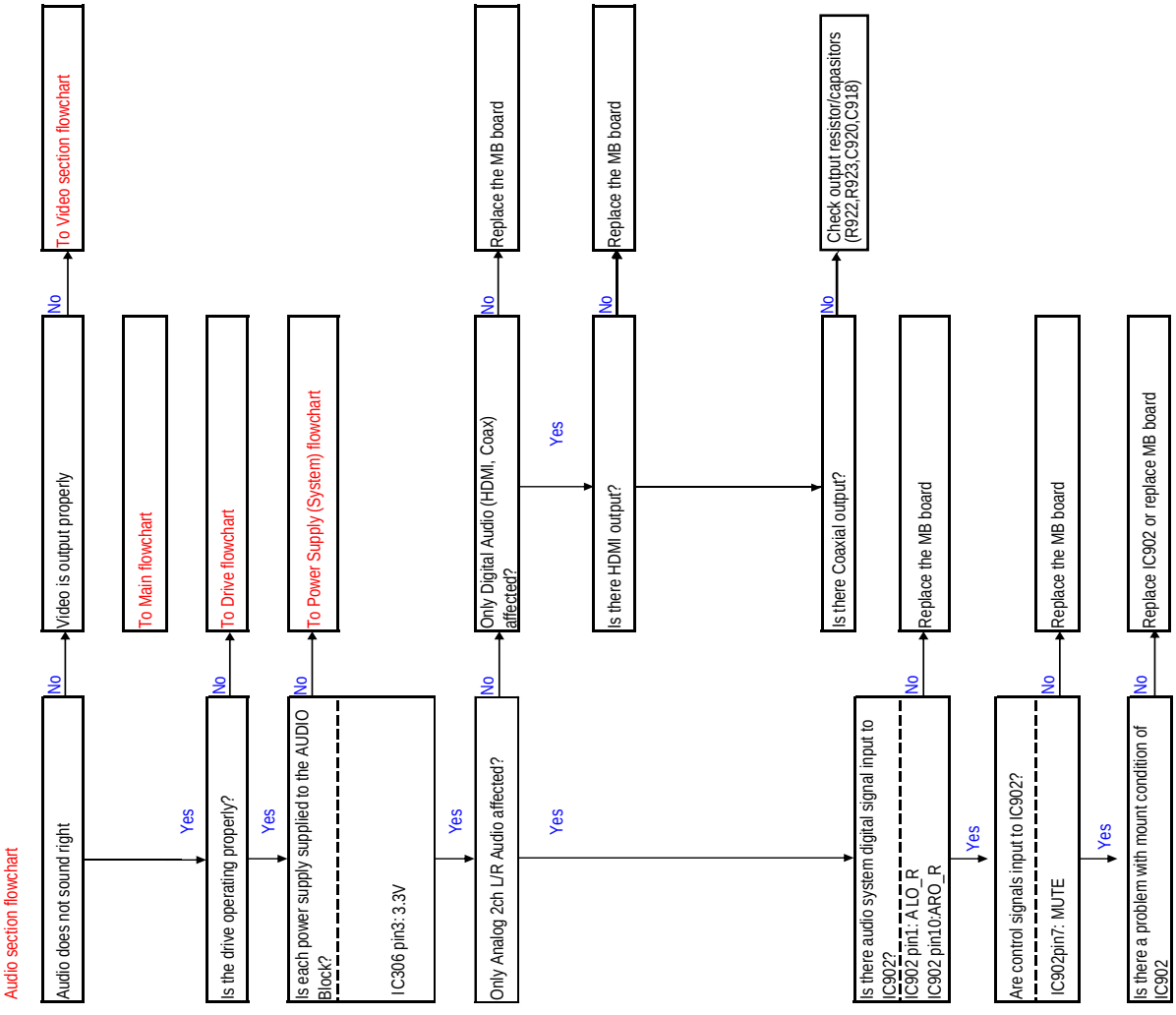
SECTION 9
TROUBLESHOOTING

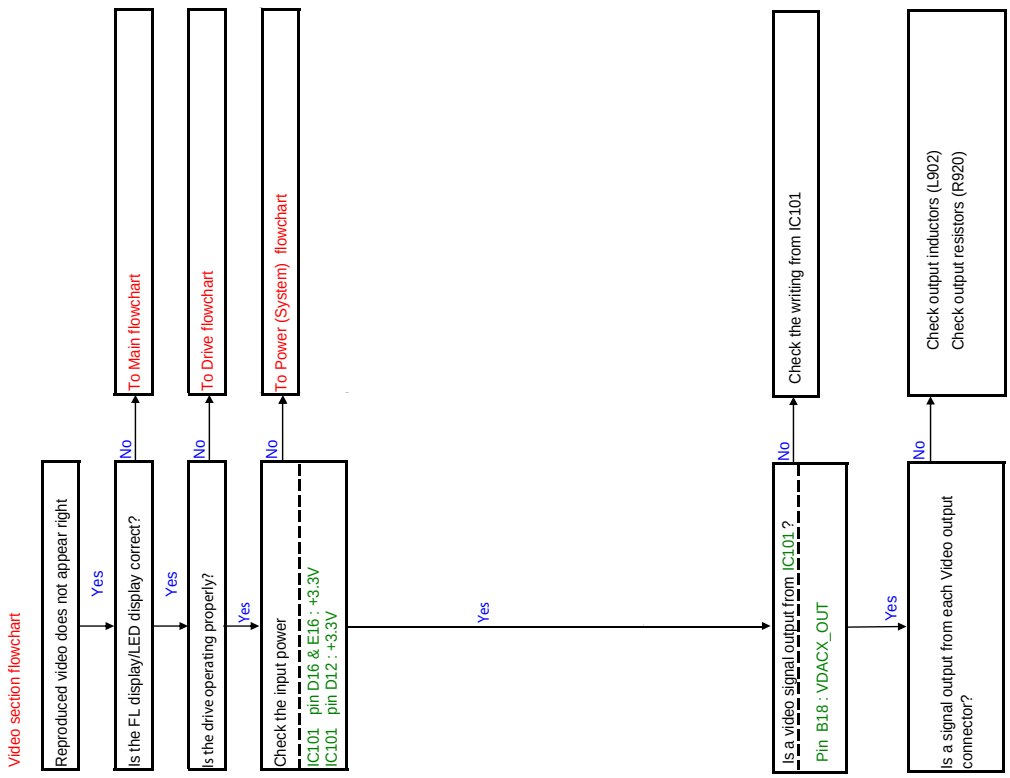
Main Flow 9-2
Power (System) Flow 9-3
Audio section flowchart..... 9-4
Video section flowchart..... 9-5
FR-316 Board flowchart 9-6
Remote does not operate..... 9-7
White LED 9-8
Drive flowchart 9-9
Ethernet flowchart..... 9-10
USB (Front) Device Flow..... 9-11E

Main Flowchart

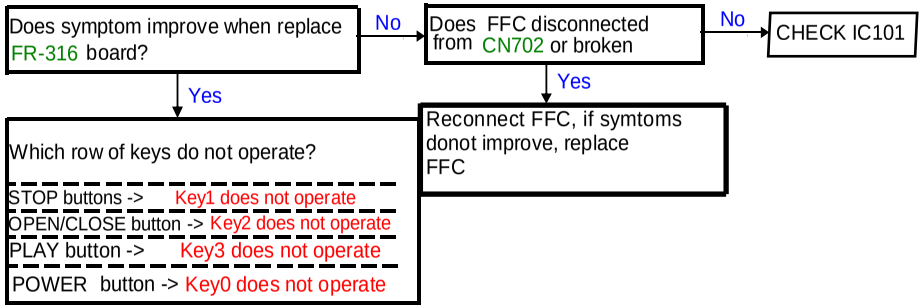

Start (and return from each flowchart)
Approximately 10 seconds after the AC is applied, the WAIT display flashes several times and the power is turned OFF automatically.
No
Are the power supply voltages on the MB board normal?
No
To Power Supply (System) flowchart.
Yes
Is the main clock (X401) oscillating properly at 27 MHz?
No
Check the parts and mounting around X401.
Yes
Has system reset (CPU_XRST) been cancelled?
* Measurement point JL1018
Yes
Replace the MB board.
To Drive flowchart
BU Adjustment Flow [yy] ~ After BU/MB Replacement ~
Yes
Power ON by power switch on front or remote control.
No
To FR board flowchart
Yes
SYS ERR display appears on fluorescent tube.
No
Is OPEN or CLOSE displayed on the fluorescent tube?
No
Is XMB or the SETUP screen displayed on the video output screen?
No
To Video section flowchart
Yes
Is there any problem in the FFC connection to CN2470 which connects the drives?
Yes
Do the up, down, left, and right arrow keys of the remote control permit operations on the XMB?
No
To FL/FR board flowchart
Yes
Replace the MB board.
To Drive flowchart
BU Adjustment Flow [yy] ~ After BU/MB Replacement ~
Yes
Are BD, DVD, or other discs that are loaded on the drive recognized correctly?
No
To Drive flowchart
Yes
Check the flexible cable of the drive.
Are CN2470,CN2462 or CN1401 disconnected?
No
To Drive flowchart
Yes
Is the sound reproduced properly when a BD, DVD, or other disc is played?
No
To Audio section flowchart
Yes
Check the connections of the connectors.
If there is no improvement, replace the MB board.
To Drive flowchart
BU Adjustment Flow [yy] ~ After BU/MB Replacement ~
Yes
Is the picture reproduced properly when a BD, DVD, or other disc is played?
No
To Video section flowchart
Yes
END


Power (System) Flow
AC IN
Check the output voltages from the power supply block.
CN201 pin 1: +12V (UNSW12V)
CN201 pin 2: +12V (UNSW12V)
CN201 pin 3: +12V (FE_UNSW12V)
-
-
No
Check that the harness has been inserted properly. If there is no problem, replace the power supply block.
Yes
Check the fuses
Have any of the below fuses blown?
MB board: PS301, PS302
No
Replace blown fuses
Replace the MB board if there is no improvement
Yes
Check the following power control signals while the power is ON
PCONT_CORE: MB board R327
PCONT2: MB board R1236
PCONT3: MB board R305,R307,R309,R343
ATA_PCONT: MB board R376
Yes
Check the voltages based on the schematic diagram
No
Voltage lines that are not output are shorted to GND
No
Failure of power supply IC -> Replace the IC
Replace the MB board if there is no improvement


Audio section flowchart
Audio does not sound right
No
Video is output properly
To Video section flowchart
Yes
Is the drive operating properly?
No
To Drive flowchart
To Main flowchart
Yes
Is each power supply supplied to the AUDIO Block?
IC306 pin3: 3.3V
No
To Power Supply (System) flowchart
Yes
Only Analog 2ch L/R Audio affected?
No
Replace the MB board
Yes
Only Digital Audio (HDMI, Coax) affected?
No
Replace the MB board
Yes
Is there HDMI output?
No
Check output resistor/capasitors (R922,R923,C920,C918)
Yes
Is there Coaxial output?
No
Replace the MB board
Yes
Is there audio system digital signal input to IC902?
IC902 pin1: ALO_R
IC902 pin10:ARO_R
No
Replace the MB board
Yes
Are control signals input to IC902?
IC902pin7: MUTE
No
Replace IC902 or replace MB board
Yes
Is there a problem with mount condition of IC902
No


Video section flowchart
Reproduced video does not appear right
Yes
Is the FL display/LED display correct?
No
To Main flowchart
Yes
Is the drive operating properly?
No
To Drive flowchart
Yes
Check the input power
IC101 pin D16 & E16 : +3.3V
IC101 pin D12 : +3.3V
No
To Power (System) flowchart
Yes
Is a video signal output from IC101?
Pin B18 : VDACX_OUT
No
Check the writing from IC101
Yes
Is a signal output from each Video output connector?
No
Check output inductors (L902)
Check output resistors (R920)

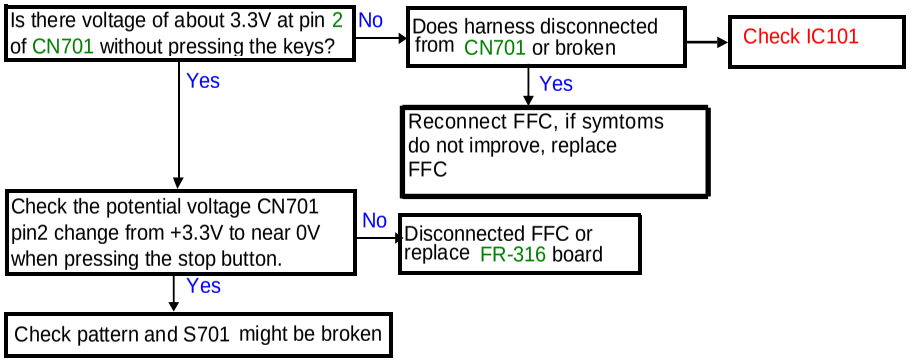
FR-316 IF board flow chart


Does symptom improve when replace FR-316 board?
No
Does FFC disconnected from CN702 or broken
No
CHECK IC101
Yes
Yes
Reconnect FFC, if symtoms donot improve, replace FFC
Which row of keys do not operate?
STOP buttons -> Key1 does not operate
OPEN/CLOSE button -> Key2 does not operate
PLAY button -> Key3 does not operate
POWER button -> Key0 does not operate

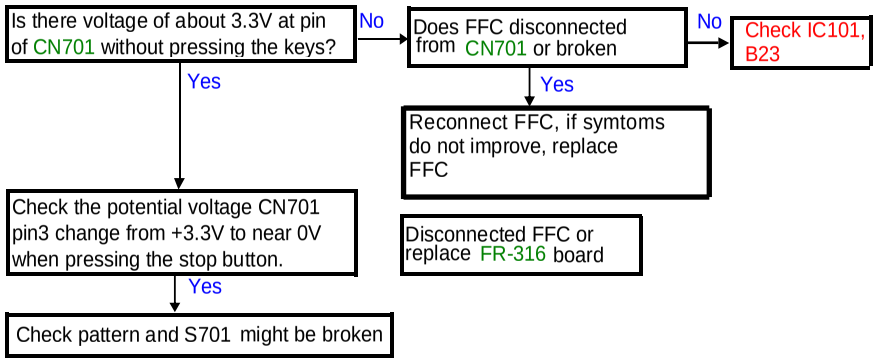
Reference: Relationship of Buttons and Voltages

Input	KEY0	KEY1	KEY2	KEY3
2.90-3.30	Key_OFF	Key_OFF	Key_OFF	Key_OFF
0.00-0.40	POWER	STOP	OPEN/CLOSE	PLAY

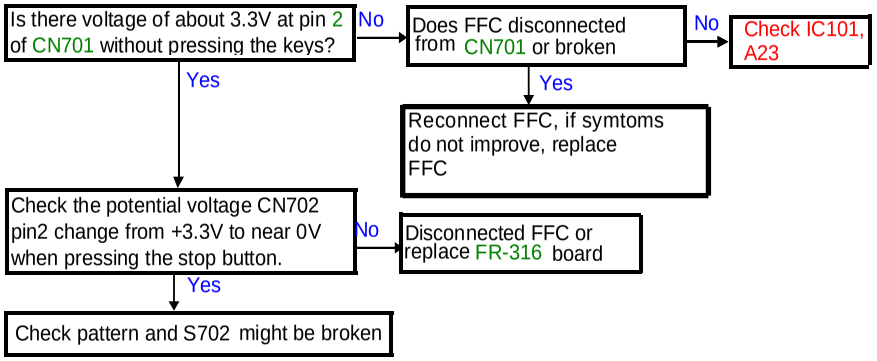
Key0 does not operate


Is there voltage of about 3.3V at pin 2 of CN701 without pressing the keys?
No
Does harness disconnected from CN701 or broken
Check IC101
Yes
Yes
Reconnect FFC, if symtoms do not improve, replace FFC
Check the potential voltage CN701 pin2 change from +3.3V to near 0V when pressing the stop button.
No
Disconnected FFC or replace FR-316 board
Yes
Check pattern and S701 might be broken

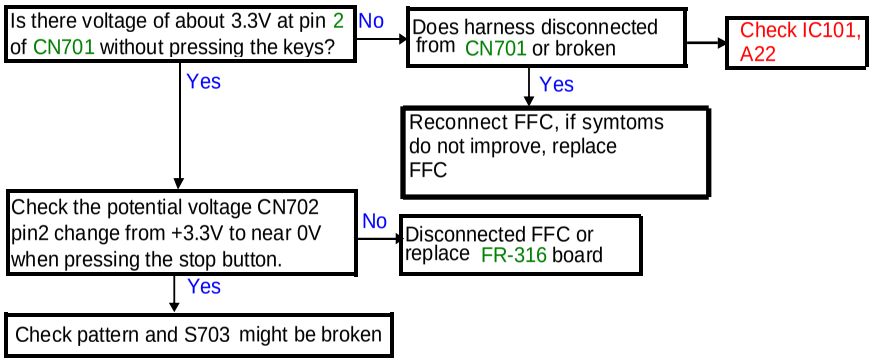
Key1 does not operate

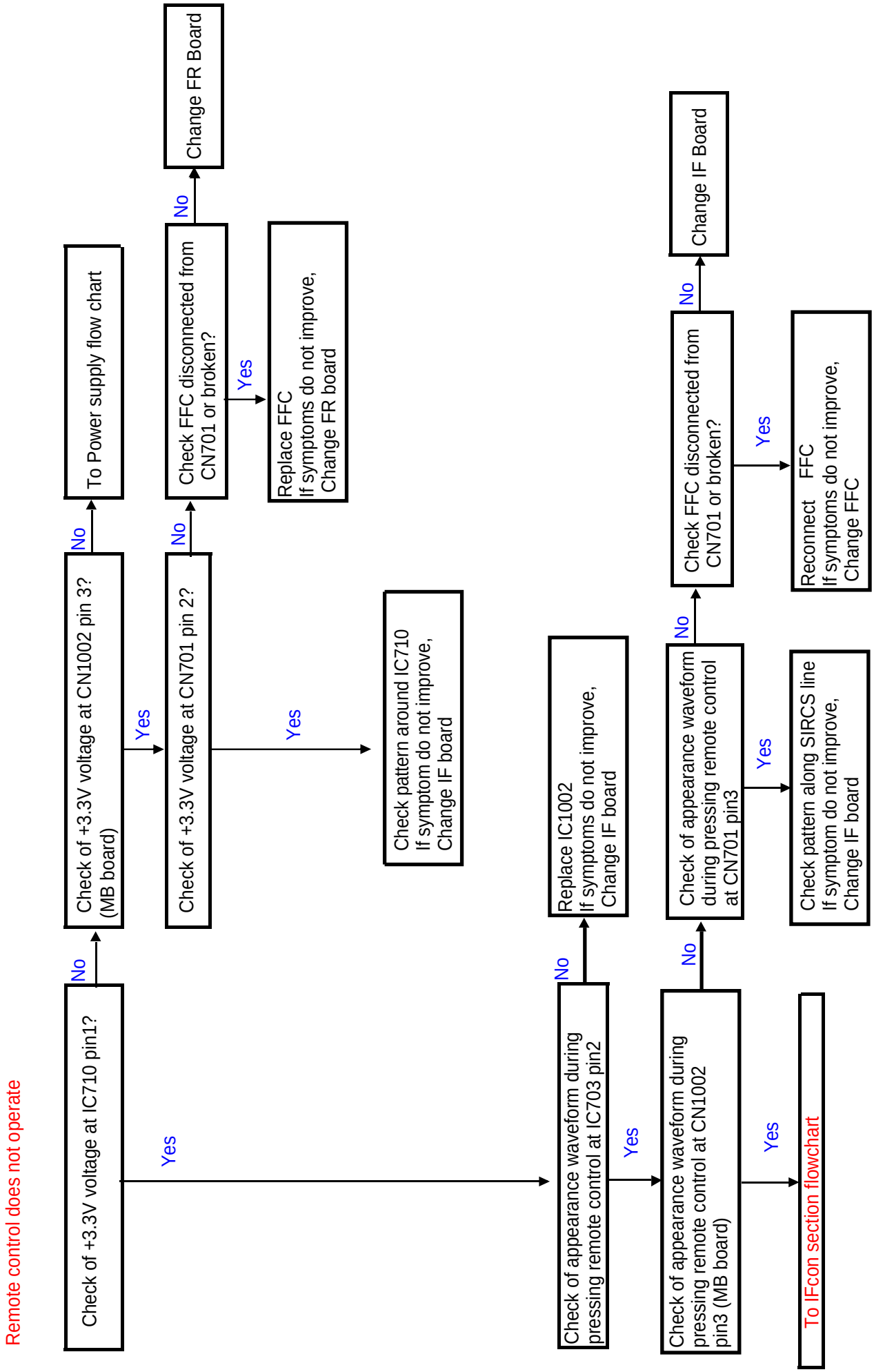

Is there voltage of about 3.3V at pin of CN701 without pressing the keys?
No
Does FFC disconnected from CN701 or broken
No
Check IC101, B23
Yes
Yes
Reconnect FFC, if symtoms do not improve, replace FFC
Check the potential voltage CN701 pin3 change from +3.3V to near 0V when pressing the stop button.
Disconnected FFC or replace FR-316 board
Yes
Check pattern and S701 might be broken

Key2 does not operate

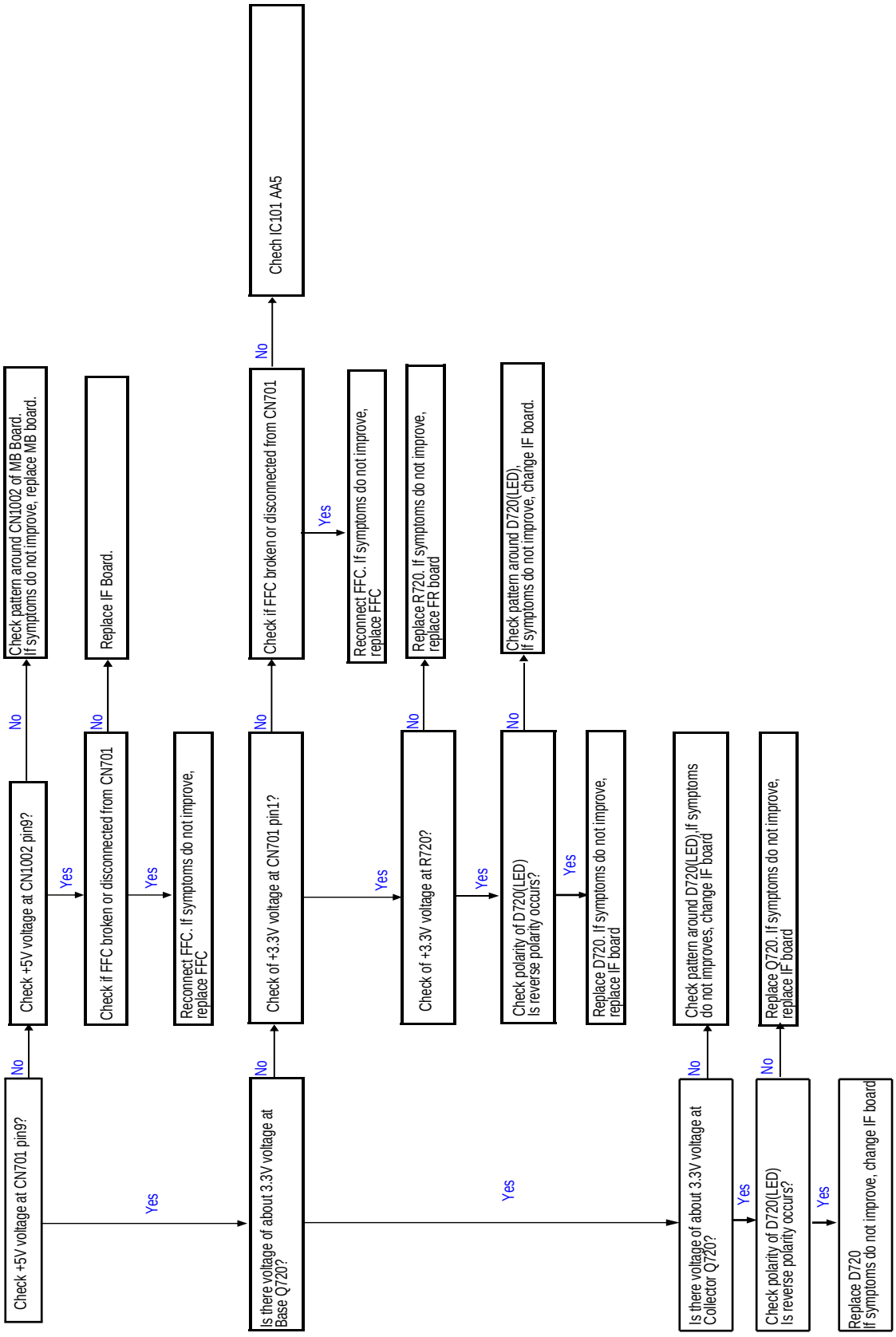

Is there voltage of about 3.3V at pin 2 of CN701 without pressing the keys?
No
Does FFC disconnected from CN701 or broken
No
Check IC101, A23
Yes
Yes
Reconnect FFC, if symtoms do not improve, replace FFC
Check the potential voltage CN702 pin2 change from +3.3V to near 0V when pressing the stop button.
No
Disconnected FFC or replace FR-316 board
Yes
Check pattern and S702 might be broken

Key3 does not operate

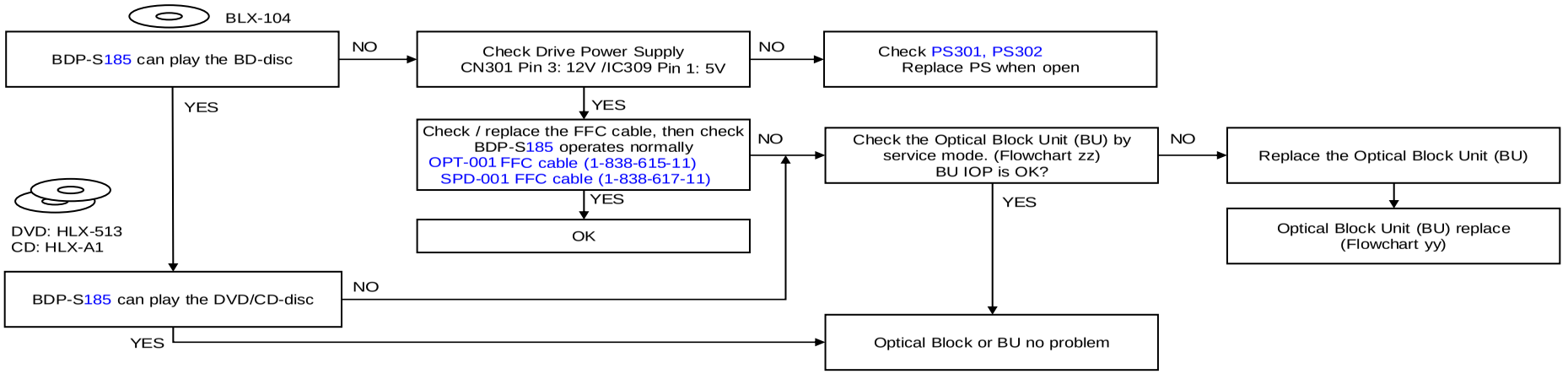

Is there voltage of about 3.3V at pin 2 of CN701 without pressing the keys?
No
Does harness disconnected from CN701 or broken
Check IC101, A22
Yes
Yes
Reconnect FFC, if symtoms do not improve, replace FFC
Check the potential voltage CN702 pin2 change from +3.3V to near 0V when pressing the stop button.
No
Disconnected FFC or replace FR-316 board
Yes
Check pattern and S703 might be broken


Remote control does not operate
Check of +3.3V voltage at IC710 pin1?
No
Check of +3.3V voltage at CN1002 pin 3? (MB board)
No
To Power supply flow chart
Yes
Check of +3.3V voltage at CN701 pin 2?
No
Check FFC disconnected from CN701 or broken?
No
Change FR Board
Yes
Replace FFC
If symptoms do not improve,
Change FR board
Yes
Check pattern around IC710
If symptom do not improve,
Change IF board
Yes
Check of appearance waveform during pressing remote control at IC703 pin2
No
Replace IC1002
If symptoms do not improve,
Change IF board
Yes
Check of appearance waveform during pressing remote control at CN1002 pin3 (MB board)
No
Check of appearance waveform during pressing remote control at CN701 pin3
No
Change IF Board
Yes
Check FFC disconnected from CN701 or broken?
Yes
Reconnect FFC
If symptoms do not improve,
Change FFC
Yes
Check pattern along SIRCS line
If symptom do not improve,
Change IF board
Yes
To IFcon section flowchart

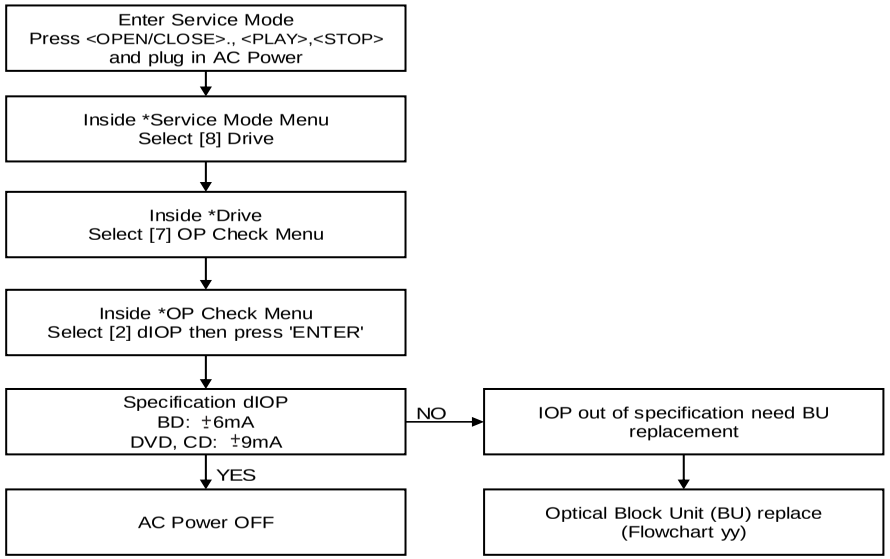
White LED does not light


Check +5V voltage at CN701 pin9?
No
Check +5V voltage at CN1002 pin9?
No
Check pattern around CN1002 of MB Board.
If symptoms do not improve, replace MB board.
Yes
Check if FFC broken or disconnected from CN701
No
Replace IF Board.
Yes
Reconnect FFC. If symptoms do not improve, replace FFC
Yes
Is there voltage of about 3.3V voltage at Base Q720?
No
Check of +3.3V voltage at CN701 pin1?
No
Chech IC101 AA5
Check if FFC broken or disconnected from CN701
No
Yes
Reconnect FFC. If symptoms do not improve, replace FFC
Yes
Check of +3.3V voltage at R720?
No
Replace R720. If symptoms do not improve, replace FR board
Yes
Check polarity of D720(LED)
Is reverse polarity occurs?
No
Check pattern around D720(LED).
If symptoms do not improve, change IF board.
Yes
Replace D720. If symptoms do not improve, replace IF board
Yes
Is there voltage of about 3.3V voltage at Collector Q720?
No
Check pattern around D720(LED).If symptoms do not improves, change IF board
Yes
Check polarity of D720(LED)
Is reverse polarity occurs?
No
Replace Q720. If symptoms do not improve, replace IF board
Yes
Replace D720
If symptoms do not improve, change IF board

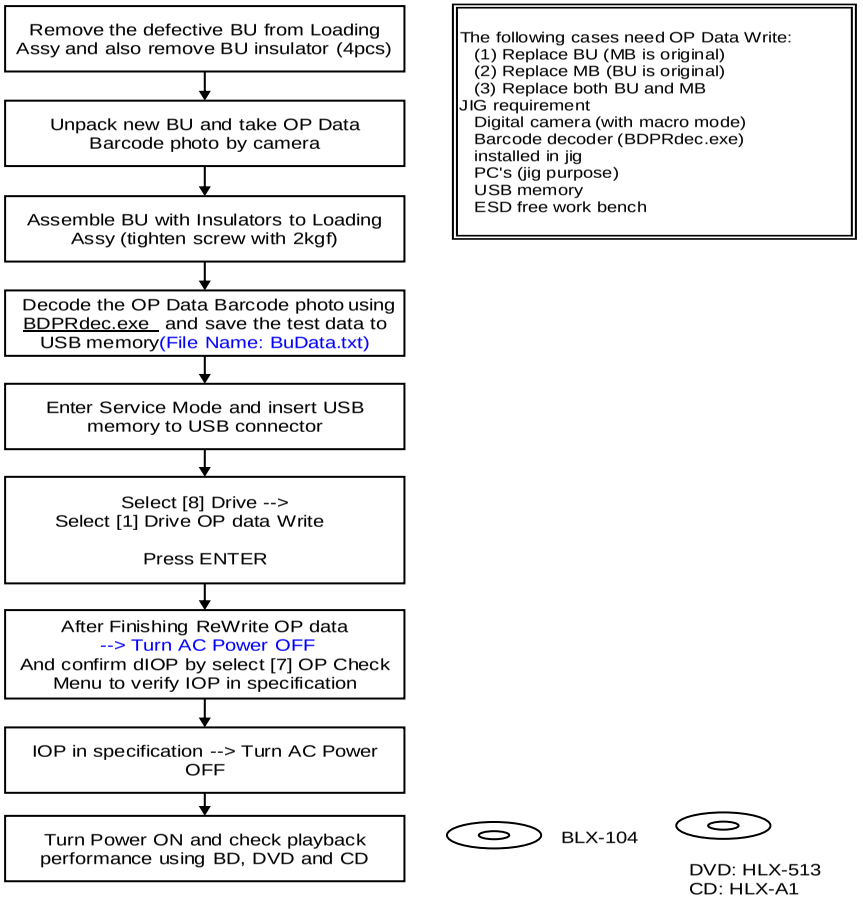
Drive flowchart

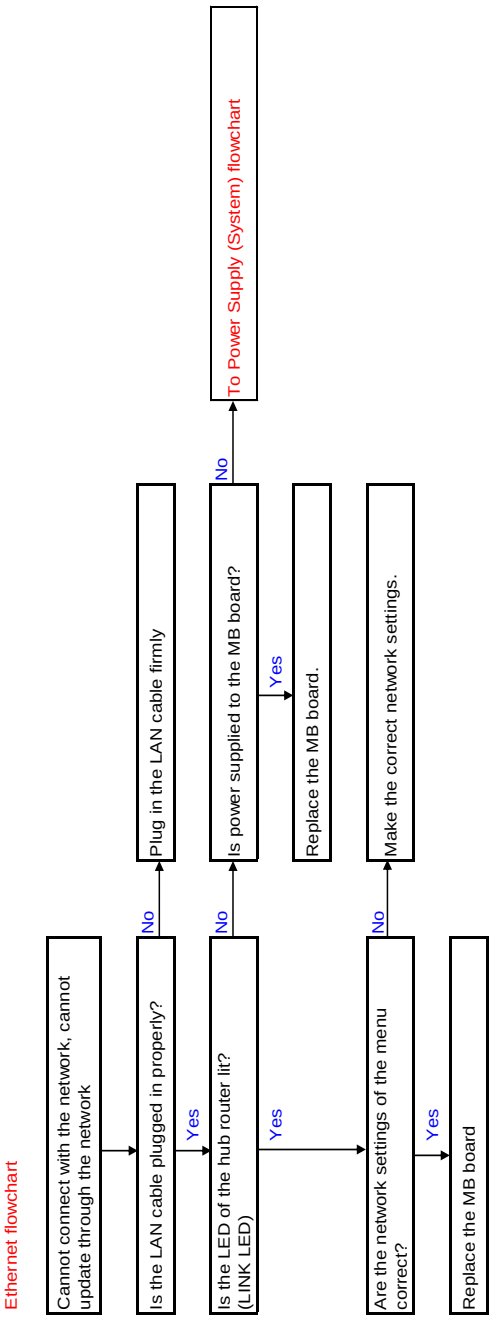


Optical Block Unit (BU) IOP check flow (zz) ~ [Before BU Replacement]



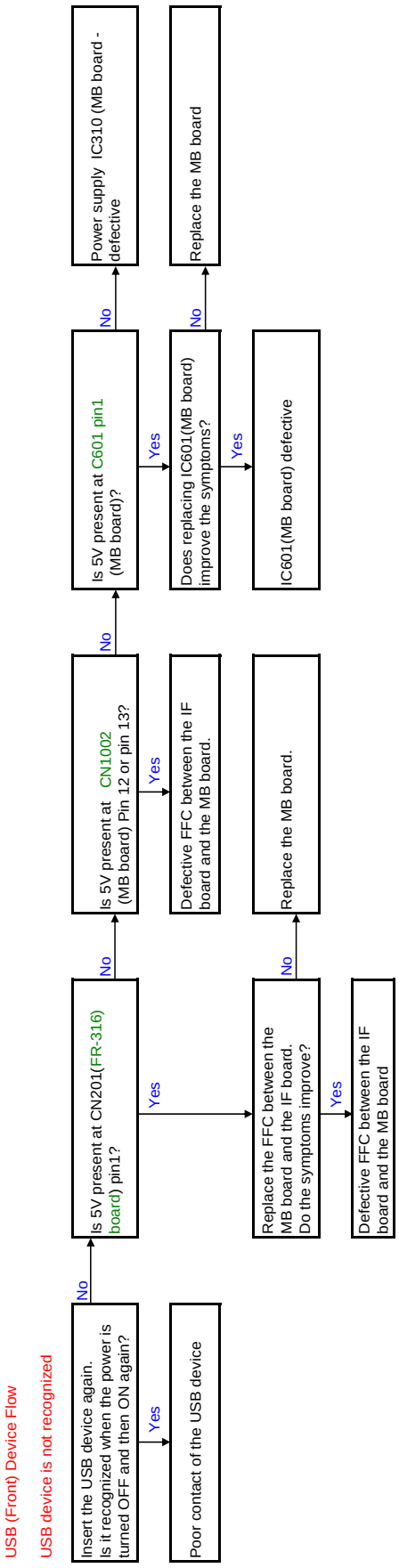
Optical Block Unit (BU) OP Data Write Flow (yy) ~ [After BU/MB Replacement]


Remove the defective BU from Loading
Assy and also remove BU insulator (4pcs)
Unpack new BU and take OP Data
Barcode photo by camera
Assemble BU with Insulators to Loading
Assy (tighten screw with 2kgf)
Decode the OP Data Barcode photo using
BDPRdec.exe and save the test data to
USB memory(File Name: BuData.txt)
Enter Service Mode and insert USB
memory to USB connector
Select [8] Drive -->
Select [1] Drive OP data Write
Press ENTER
After Finishing ReWrite OP data
--> Turn AC Power OFF
And confirm dIOP by select [7] OP Check
Menu to verify IOP in specification
IOP in specification --> Turn AC Power
OFF
Turn Power ON and check playback
performance using BD, DVD and CD
The following cases need OP Data Write:
(1) Replace BU (MB is original)
(2) Replace MB (BU is original)
(3) Replace both BU and MB
JIG requirement
Digital camera (with macro mode)
Barcode decoder (BDPRdec.exe)
installed in jig
PC's (jig purpose)
USB memory
ESD free work bench
BLX-104
DVD: HLX-513
CD: HLX-A1


Ethernet flowchart
Cannot connect with the network, cannot update through the network
Is the LAN cable plugged in properly?
No
Plug in the LAN cable firmly
Yes
Is the LED of the hub router lit? (LINK LED)
No
Is power supplied to the MB board?
No
To Power Supply (System) flowchart
Yes
Replace the MB board.
Yes
Are the network settings of the menu correct?
No
Make the correct network settings.
Yes
Replace the MB board

USB (Front) Device Flow

USB device is not recognized


Insert the USB device again.
Is it recognized when the power is turned OFF and then ON again?
No
Yes
Poor contact of the USB device
Is 5V present at CN201(FR-316) board) pin1?
No
Yes
Defective FFC between the IF board and the MB board.
Is 5V present at CN1002 (MB board) Pin 12 or pin 13?
No
Yes
Replace the MB board.
Is 5V present at C601 pin1 (MB board)?
No
Yes
IC601(MB board) defective
Does replacing IC601(MB board) improve the symptoms?
No
Yes
Replace the MB board
Power supply IC310 (MB board - defective
Replace the FFC between the MB board and the IF board. Do the symptoms improve?
No
Yes
Defective FFC between the IF board and the MB board

SECTION 10
REPAIR PARTS LIST

10-1. EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↓ ↓
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of the electrical parts list.

Abbreviation
AEP : AEP Model
AR : Argentina Model
AUS : Australia New Zealand Model
BR : Brazilian Model
CND : Canadian Model
E : Latin America Model
EA : Middle East Model
IN : India Model

AUS : Australia/NZ Model
AEP : AEP Model
CND : Canadian Model
CN : China Model
US : USA Model
UK : UK Model
RUS : Russian Model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

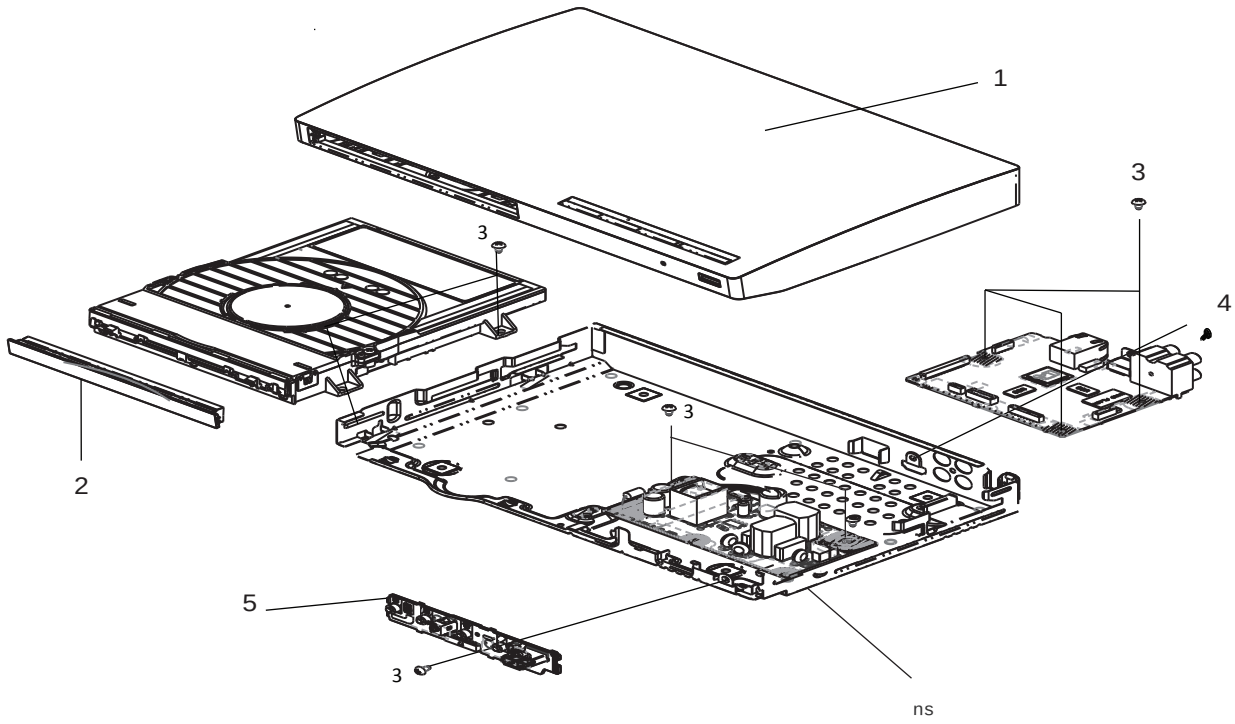
Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

The components identified by mark 🔒 contain confidential information.
Strictly follow the instructions whenever the components are repaired and/or replaced.

Les composants identifiés par la marque 🔒 contiennent des informations confidentielles.
Suivre scrupuleusement les instructions chaque fois qu'un composant est remplacé et / ou réparé.

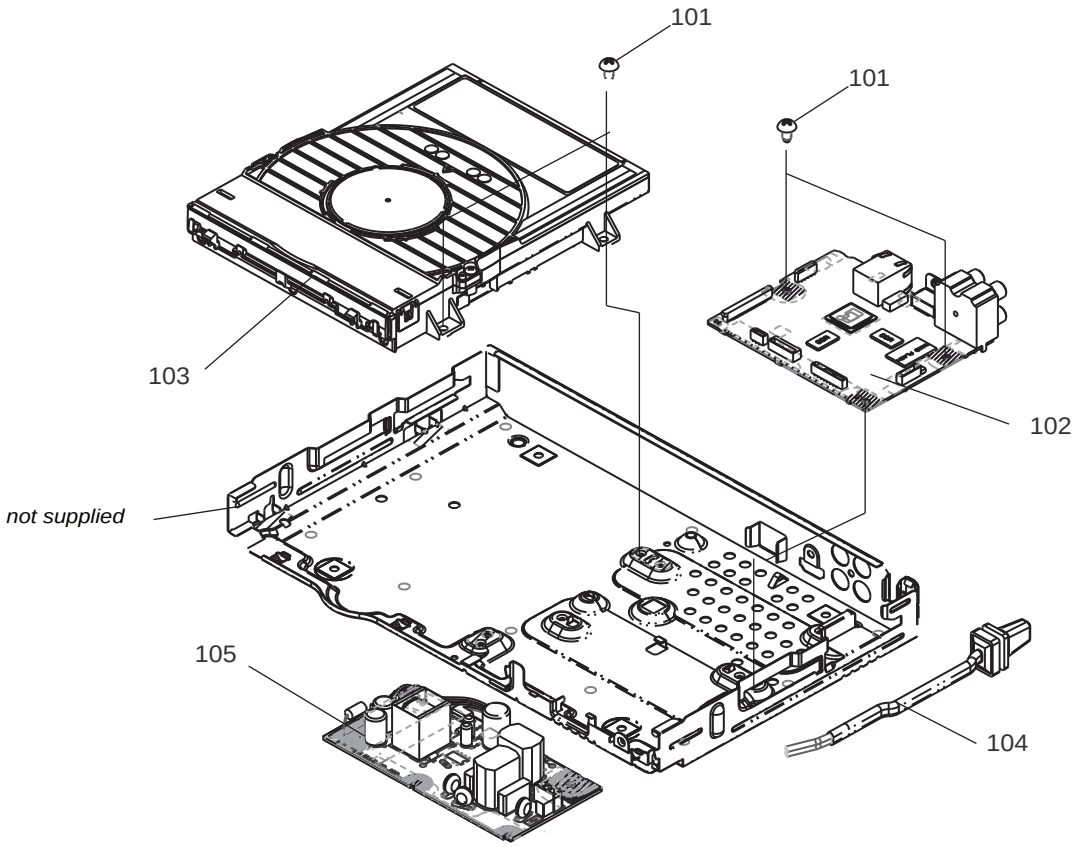
10-1-1. CASE SECTION

ns: not supplied



Ref. No.	Part No.	Description	Remark
1	X-2582-717-1	PANEL ASSY, TOP	(BDP-S185:US,CND)
1	X-2582-020-1	PANEL ASSY, TOP	(BDP-S185:AEP,CN,RUS,UK-)
1	X-2582-812-1	PANEL ASSY, TOP	(BDP-S186)
1	X-2582-612-1	PANEL ASSY, TOP	(BDP-BX18)
2	X-2582-811-1	COVER TRAY ASSY	(BDP-S186)
2	X-2582-128-1	COVER TRAY ASSY	(BDP-S185/BX18)
3	3-077-331-21	+BV3 (3-CR)	
4	3-077-331-41	+BV3 (3-CR)	
5	A-1844-234-A	SERVICE ASSY, FR	(BDP-S185/BX18)
5	A-1848-283-A	SERVICE ASSY, FR	(BDP-S186)

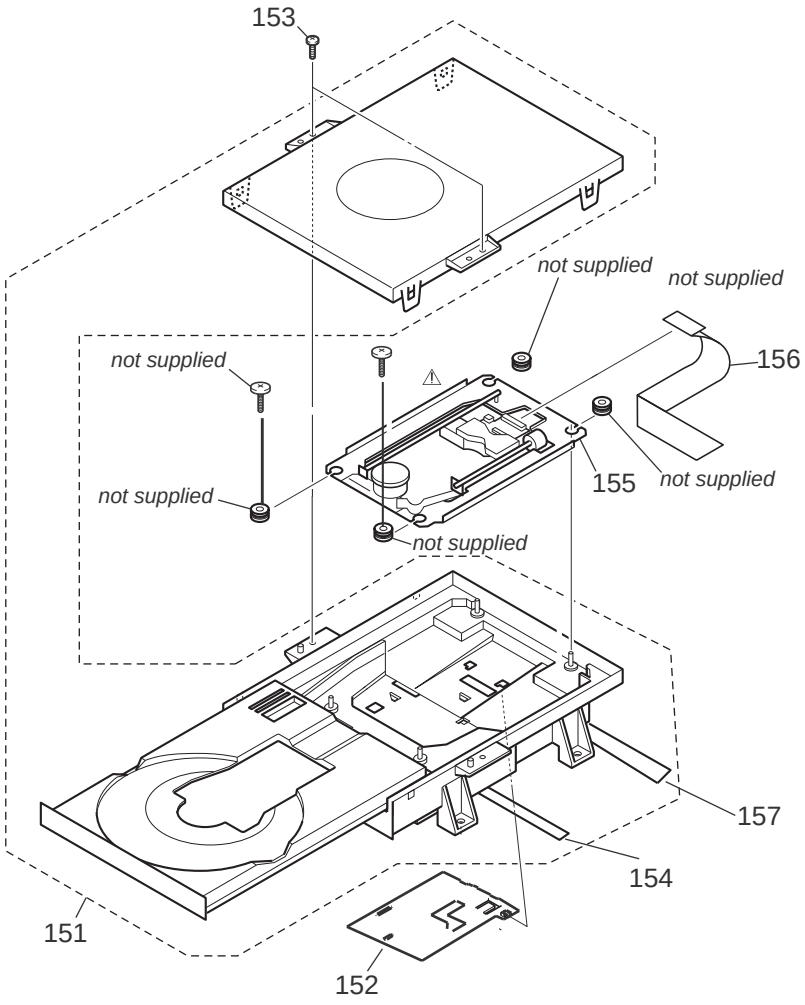
10-1-2. MAIN CHASSIS SECTION



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
101	3-077-331-21	+BV3 (3-CR)	
103	A-1750-926-B	LOADING FOR SERVICE	
102	A-1844-233-A	SERVICE ASSY, MB	(BDP-S186)
102	A-1844-260-A	SERVICE ASSY, MB	(BDP-S185:US/BX18:US)
102	A-1844-269-A	SERVICE ASSY, MB	(BDP-S185:CND/BX18:CND)
102	A-1845-241-A	SERVICE ASSY, MB	(BDP-S185:RUS)
102	A-1845-267-A	SERVICE ASSY, MB	(BDP-S185:CN)
102	A-1845-262-A	SERVICE ASSY, MB	(BDP-S185:AUS)
102	A-1844-233-A	SERVICE ASSY, MB	(BDP-S185:AEP,UK/S186)
104	1-839-443-11	POWER-SUPPLY CORD	(BDP-S186)
104	1-839-445-11	POWER-SUPPLY CORD	(BDP-S185:US,CND/BX18:US,CND)
104	1-839-443-11	POWER-SUPPLY CORD	(BDP-S185:AEP,RUS)
104	1-839-446-11	POWER-SUPPLY CORD	(BDP-S185:CN)
104	1-839-447-11	POWER-SUPPLY CORD	(BDP-S185:AUS)
104	1-839-444-11	POWER-SUPPLY CORD	(BDP-S185:UK)
105	1-474-364-11	SWITCHING REGULATOR	(BDP-S185:US,CND/BX18:US,CND)
105	1-474-363-11	SWITCHING REGULATOR	(BDP-S185:AEP,AUS,RUS,UK/S186)
105	1-474-365-11	SWITCHING REGULATOR	(BDP-S185:CN)

10-1-3. BD SECTION



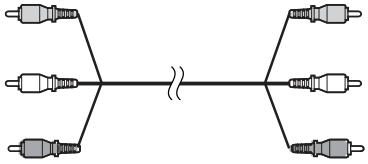
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
⚠151	A-1750-926-B	LOADING FOR SERVICE	
152	4-167-321-01	HOLDER, FFC (RIGHT)	
153	3-087-053-11	+BVTP2.6 (3CR)	
154	1-839-259-11	FLEXIBLE FLAT CABLE (LDG-003)	

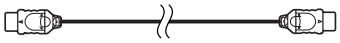
Ref. No.	Part No.	Description	Remark
156	1-839-257-11	FLEXIBLE FLAT CABLE (OPT-003)	
157	1-839-258-11	FLEXIBLE FLAT CABLE (SPD-003)	
⚠155	8-820-445-04	DEVICE,OPTICAL KEM-470AAA/C2RP	

10-1-4. ACCESSORIES

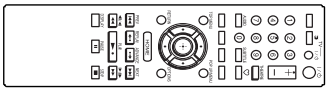
150
Audio/Video Cable (Phono Plug x3)



151
HDMI Cable



152
Remote Commander



The components identified by mark ⚠ or dotted line with mark are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque sont critiquens pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

	Part No.	Part Description	Remarks
150	1-837-797-21	CORD, CONNECTION (AV)	
151	1-834-169-22	CORD, CONNECTION (HDMI CABLE)	(BDP-S185:CN)
152	1-489-401-11	REMOTE COMMANDER (RMT-B109C)	(BDP-S185:CN)
152	1-489-959-11	REMOTE COMMANDER (RMT-B118A)	(BDP-S185:US,CND/BX18)
152	1-489-960-11	REMOTE COMMANDER (RMT-B118P)	(BDP-S185:AUS,AEP,UK,RUS/S186)
⚠	1-474-363-11	SWITCHING REGULATOR	(BDP-S185:AEP,UK,RUS,AUS)
⚠	1-474-364-11	SWITCHING REGULATOR	(BDP-S185:US,CND/BX18)
⚠	1-474-365-11	SWITCHING REGULATOR	(BDP-S185:CN)
*	4-290-281-11	MANUAL, INSTRUCTION	(BDP-S185:US,CND/BX18) (ENGLISH)
*	4-290-281-21	MANUAL, INSTRUCTION	(BDP-S185:CND/BX18:CND) (FRENCH)
*	4-290-281-31	MANUAL, INSTRUCTION	(BDP-S185:CN) (CHINESE SIMPLIFIED)
*	4-290-282-11	MANUAL, INSTRUCTION	(BDP-S185:UK,AUS) (ENGLISH)
*	4-290-282-21	MANUAL, INSTRUCTION	(BDP-S185:AE1/S186:AE1) (FRENCH)
*	4-290-282-31	MANUAL, INSTRUCTION	(BDP-S185:AE1/S186:AE1) (GERMAN)
*	4-290-282-41	MANUAL, INSTRUCTION	(BDP-S185:AE1/S186:AE1) (ITALIAN)
*	4-290-282-51	MANUAL, INSTRUCTION	(BDP-S185:AE1/S186:AE1) (DUTCH)
*	4-290-283-11	MANUAL, INSTRUCTION	(BDP-S185:AE2/S186:AE2) (SPANISH)
*	4-290-283-21	MANUAL, INSTRUCTION	(BDP-S185:AE2/S186:AE2) (PORTUGUESE)
*	4-290-283-31	MANUAL, INSTRUCTION	(BDP-S185:AE2/S186:AE2) (SWEDISH)
*	4-290-283-41	MANUAL, INSTRUCTION	(BDP-S185:AE2/S186:AE2) (DANISH)
*	4-290-283-51	MANUAL, INSTRUCTION	(BDP-S185:AE2/S186:AE2) (FINNISH)
*	4-290-283-61	MANUAL, INSTRUCTION	(BDP-S185:RUS) (RUSSIAN)
*	4-290-283-71	MANUAL, INSTRUCTION	(BDP-S185:RUS) (UKRAINIAN)

8-2. ELECTRICAL PARTS LIST

FR-316 | MB-413

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Not all of the parts for SWITCHING REGULATOR are listed.
- Items marked * are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

Abbreviation

AEP : AEP Model
AUS : Australia New Zealand Model
CN : China Model
CND : Canadian Model
US : USA Model
UK : UK Model
RUS : Russian Model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

The components identified by mark 🔒 contain confidential information.
Strictly follow the instructions whenever the components are repaired and/or replaced.

A-1844-234-A SERVICE ASSY,FR (BDPS185/BX18)

A-1848-283-A SERVICE ASSY,FR (BDPS186)

	Ref-No.	Part No.	Part Description E
			<CAPASITOR>
	C712	1-162-970-91	CERAMIC CHIP 0.01UF 10.00% 25V
	C711	1-100-909-11	CERAMIC CHIP 10UF 10% 6.3V
	C201	1-112-298-91	CERAMIC CHIP 1UF 10% 16V
	C202	1-162-910-91	CERAMIC CHIP 5PF 0.25PF 50V
	C203	1-162-910-91	CERAMIC CHIP 5PF 0.25PF 50V
			<CONNECTOR>
	CN701	1-785-731-51	CONNECTOR,FFC/FPC 17P
*	CN201	1-819-866-11	CONNECTOR,USB(A)
			<DIODE>
	D720	6-503-661-01	DI1L0352W84A0CT01
	C204	1-125-972-91	ELECT 100UF 20.00% 16V
			<IC>
	IC710	6-600-665-01	ICGP1UE27XK0VF
	IC710	6-600-786-01	ICHV2140RST-12M2
			<RESISTOR>
	R710	1-216-809-91	METAL CHIP 100 5% 1/10W
	R720	1-216-809-91	METAL CHIP 100 5% 1/10W
	R201	1-216-295-91	SHORT CHIP 0
	R202	1-216-864-91	SHORT CHIP 0
	R203	1-216-864-91	SHORT CHIP 0
			<SWITCH>
	S700	1-771-874-11	SWITCH,TACTILE
	S701	1-771-874-11	SWITCH,TACTILE
	S702	1-771-874-11	SWITCH,TACTILE
	S703	1-771-874-11	SWITCH,TACTILE
			<TRANSISTOR>
	Q720	8-729-038-26	TRANSISTOR RT1N430C-TP-1
			<CONNECTOR>
	CN201	1-843-099-11	USB CONNECTOR(A)

🔒 A-1844-260-A SERVICE ASSY, MB (BDP-S185:US/BX18:US)
🔒 A-1844-269-A SERVICE ASSY, MB (BDP-S185:CND/BX18:CND)
🔒 A-1845-241-A SERVICE ASSY, MB (BDP-S185:RUS)
🔒 A-1845-267-A SERVICE ASSY, MB (BDP-S185:CN)
🔒 A-1845-262-A SERVICE ASSY, MB (BDP-S185:AUS)
🔒 A-1844-233-A SERVICE ASSY, MB (BDP-S185:AEP,UK/S186)

Ref-No.	Part No.	Part Description E
		<CAPASITOR>
C101	1-116-390-91	CERAMIC CHIP 2.2UF 20% 6.3V
C102	1-100-909-11	CERAMIC CHIP 10UF 10% 6.3V
C114	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V
C115	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V
C118	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V
C119	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V
C120	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V
C121	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V
C122	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V
C123	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V
C124	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V
C125	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V
C128	1-100-909-11	CERAMIC CHIP 10UF 10% 6.3V
C129	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V
C159	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V
C202	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V
C203	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V
C204	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V
C206	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V
C207	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V
C211	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V
C214	1-100-909-11	CERAMIC CHIP 10UF 10% 6.3V
C215	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V
C304	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V
C307	1-112-777-11	CERAMIC CHIP 0.01UF 10% 25V
C309	1-165-908-91	CERAMIC CHIP 1UF 10% 10V
C310	1-112-777-11	CERAMIC CHIP 0.01UF 10% 25V
C321	1-114-553-11	CERAMIC CHIP 10UF 10% 16V
C323	1-112-777-11	CERAMIC CHIP 0.01UF 10% 25V
C324	1-100-909-11	CERAMIC CHIP 10UF 10% 6.3V
C325	1-112-777-11	CERAMIC CHIP 0.01UF 10% 25V

Ref-No.	Part No.	Part Description	Remarks
C331	1-114-802-11	CERAMIC CHIP 0.0033UF	10% 50V
C336	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C340	1-114-553-11	CERAMIC CHIP 10UF	10% 16V
C341	1-114-553-11	CERAMIC CHIP 10UF	10% 16V
C343	1-114-553-11	CERAMIC CHIP 10UF	10% 16V
C344	1-112-777-11	CERAMIC CHIP 0.01UF	10% 25V
C345	1-112-777-11	CERAMIC CHIP 0.01UF	10% 25V
C346	1-112-777-11	CERAMIC CHIP 0.01UF	10% 25V
C349	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C351	1-100-159-91	CERAMIC CHIP 22UF	10% 6.3V
C352	1-100-159-91	CERAMIC CHIP 22UF	10% 6.3V
C353	1-100-159-91	CERAMIC CHIP 22UF	10% 6.3V
C355	1-100-159-91	CERAMIC CHIP 22UF	10% 6.3V
C356	1-112-777-11	CERAMIC CHIP 0.01UF	10% 25V
C358	1-112-777-11	CERAMIC CHIP 0.01UF	10% 25V
C361	1-112-777-11	CERAMIC CHIP 0.01UF	10% 25V
C365	1-114-553-11	CERAMIC CHIP 10UF	10% 16V
C366	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C367	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C369	1-112-777-11	CERAMIC CHIP 0.01UF	10% 25V
C373	1-112-777-11	CERAMIC CHIP 0.01UF	10% 25V
C374	1-112-777-11	CERAMIC CHIP 0.01UF	10% 25V
C385	1-112-777-11	CERAMIC CHIP 0.01UF	10% 25V
C393	1-112-777-11	CERAMIC CHIP 0.01UF	10% 25V
C399	1-112-777-11	CERAMIC CHIP 0.01UF	10% 25V
C442	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C446	1-164-850-81	CERAMIC CHIP 10PF	0.50PF 50V
C447	1-164-850-81	CERAMIC CHIP 10PF	0.50PF 50V
C452	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C456	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C457	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C458	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C459	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C460	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C461	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C462	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C463	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C464	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C465	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C466	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C467	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C468	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C469	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C470	1-100-909-11	CERAMIC CHIP 10UF	10% 6.3V
C471	1-100-909-11	CERAMIC CHIP 10UF	10% 6.3V
C504	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C507	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C602	1-116-716-11	CERAMIC CHIP 10UF	10% 16V
C607	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C608	1-100-909-11	CERAMIC CHIP 10UF	10% 6.3V
C632	1-116-716-11	CERAMIC CHIP 10UF	10% 16V
C702	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C717	1-112-021-91	CERAMIC CHIP 2.2UF	20% 16V
C720	1-112-300-91	CERAMIC CHIP 4.7UF	10% 10V
C723	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C811	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C812	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C902	1-165-908-91	CERAMIC CHIP 1UF	10% 10V
C903	1-165-908-91	CERAMIC CHIP 1UF	10% 10V
C904	1-100-909-11	CERAMIC CHIP 10UF	10% 6.3V
C914	1-164-882-81	CERAMIC CHIP 220PF	5.00% 16V
C915	1-164-882-81	CERAMIC CHIP 220PF	5.00% 16V
C918	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C920	1-164-862-81	CERAMIC CHIP 33PF	5.00% 50V
C922	1-100-909-11	CERAMIC CHIP 10UF	10% 6.3V
C923	1-165-908-91	CERAMIC CHIP 1UF	10% 10V
C924	1-100-740-81	CERAMIC CHIP 390PF	5% 50V
C925	1-100-740-81	CERAMIC CHIP 390PF	5% 50V
C928	1-164-876-81	CERAMIC CHIP 120PF	5.00% 50V
C929	1-164-876-81	CERAMIC CHIP 120PF	5.00% 50V
C930	1-164-866-81	CERAMIC CHIP 47PF	5.00% 50V
C931	1-164-866-81	CERAMIC CHIP 47PF	5.00% 50V
C933	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C938	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C939	1-100-909-11	CERAMIC CHIP 10UF	10% 6.3V
C940	1-100-909-11	CERAMIC CHIP 10UF	10% 6.3V
C944	1-100-909-11	CERAMIC CHIP 10UF	10% 6.3V
C1002	1-100-905-11	CERAMIC CHIP 0.001UF	10% 50V
C1004	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C1005	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C1006	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C1007	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C1008	1-112-300-91	CERAMIC CHIP 4.7UF	10% 10V
C1011	1-100-905-11	CERAMIC CHIP 0.001UF	10% 50V
C1012	1-112-777-11	CERAMIC CHIP 0.01UF	10% 25V
C1013	1-100-905-11	CERAMIC CHIP 0.001UF	10% 50V
C1014	1-100-905-11	CERAMIC CHIP 0.001UF	10% 50V
C1101	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C1102	1-100-905-11	CERAMIC CHIP 0.001UF	10% 50V
C1105	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C1106	1-100-905-11	CERAMIC CHIP 0.001UF	10% 50V
C1110	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C1112	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C1118	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C1122	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C1123	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C1125	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C1126	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C1129	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C1134	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
* C1162	1-112-298-91	CERAMIC CHIP 1UF	10% 16V
C1163	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
* C1165	1-112-298-91	CERAMIC CHIP 1UF	10% 16V
C1166	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C1173	1-112-777-11	CERAMIC CHIP 0.01UF	10% 25V
* C1174	1-112-298-91	CERAMIC CHIP 1UF	10% 16V
* C1175	1-112-298-91	CERAMIC CHIP 1UF	10% 16V
* C1176	1-112-298-91	CERAMIC CHIP 1UF	10% 16V
C1177	1-112-777-11	CERAMIC CHIP 0.01UF	10% 25V
C1178	1-112-777-11	CERAMIC CHIP 0.01UF	10% 25V
C1190	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C1195	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V
C1197	1-100-916-11	CERAMIC CHIP 0.1UF	10% 16V

Ref-No.	Part No.	Part Description	Remarks
C1205	1-137-765-21	ELECT CHIP 47UF 20% 16V	
C1212	1-137-765-21	ELECT CHIP 47UF 20% 16V	
C1271	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V	
C1273	1-112-298-91	CERAMIC CHIP 1UF 10% 16V	
C1274	1-100-905-11	CERAMIC CHIP 0.001UF 10% 50V	
C2200	1-112-777-11	CERAMIC CHIP 0.01UF 10% 25V	
C2201	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V	
C2202	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V	
* C2204	1-112-298-91	CERAMIC CHIP 1UF 10% 16V	
C2205	1-114-553-11	CERAMIC CHIP 10UF 10% 16V	
C2206	1-112-777-11	CERAMIC CHIP 0.01UF 10% 25V	
C2212	1-114-553-11	CERAMIC CHIP 10UF 10% 16V	
C2226	1-112-777-11	CERAMIC CHIP 0.01UF 10% 25V	
C2232	1-112-777-11	CERAMIC CHIP 0.01UF 10% 25V	
C2233	1-112-777-11	CERAMIC CHIP 0.01UF 10% 25V	
* C2238	1-112-298-91	CERAMIC CHIP 1UF 10% 16V	
C2239	1-112-777-11	CERAMIC CHIP 0.01UF 10% 25V	
C2240	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V	
C2241	1-112-777-11	CERAMIC CHIP 0.01UF 10% 25V	
C2250	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V	
* C2254	1-112-298-91	CERAMIC CHIP 1UF 10% 16V	
C2260	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V	
C2270	1-100-916-11	CERAMIC CHIP 0.1UF 10% 16V	
* C2281	1-112-298-91	CERAMIC CHIP 1UF 10% 16V	
* C2286	1-112-298-91	CERAMIC CHIP 1UF 10% 16V	
* C2295	1-112-298-91	CERAMIC CHIP 1UF 10% 16V	
		<CONNECTOR>	
CN301	1-770-470-21	PIN, CONNECTOR (PC BOARD) 6P	
CN701	1-821-398-21	HDMI CONNECTOR	
CN801	1-842-334-21	UDE ETHERNET CONNECTOR (8P)	
CN1001	1-573-806-21	PIN, CONNECTOR (1.5MM) (SMD)6P	
CN1002	1-820-116-51	CONNECTOR, FFC/FPC 17P	
CN1101	1-843-036-11	FFC/FPC CONNECTOR 45P	
		<DIODE>	
D304	6-502-248-01	DI KDZTR3.9B	
D312	6-502-966-01	DI DZ2J056M0L	
D316	6-503-011-01	DI DZ2J039M0L	
		<fERRITE BEAD>	
FB101	1-400-794-21	FERRITE 0UH	
FB301	1-469-324-21	FERRITE 0UH	
FB302	1-469-324-21	FERRITE 0UH	
FB702	1-400-462-21	FERRITE 0UH	
FB703	1-400-462-21	FERRITE 0UH	
FB704	1-400-462-21	FERRITE 0UH	
FB705	1-400-462-21	FERRITE 0UH	
FB706	1-400-462-21	FERRITE 0UH	
FB2200	1-244-161-81	METAL CHIP 2.2 5% 1/16W	
		<IC>	
* IC106	6-716-964-01	IC K4B2G1646C-HCH9	
IC206	6-716-738-01	IC H5TQ1G63DFR-H9CR	
IC206	6-717-431-01	IC K4B1G1646G-BCH9T	
IC301	6-717-694-01	IC BU33TD3WG-TR	
IC306	6-717-880-01	IC BD9328EFJ-E2	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref-No.	Part No.	Part Description	Remarks
IC307	6-717-880-01	IC BD9328EFJ-E2	
IC310	6-717-879-01	IC RT8293ALZSP	
IC313	6-715-678-01	IC PST8450UL	
IC503	6-711-181-01	IC S-80830CNNB-B8PT2G	
IC601	6-715-164-01	IC TPS2553DBVR	
IC705	6-717-798-01	IC R1191N050B-TR-FE	
IC902	6-716-753-01	IC NJU72010RB2-TE2	
IC1001	6-717-878-01	IC STM6779SWB6F	
IC1161	6-716-786-01	IC MM1685YNRE	
IC1271	6-717-809-01	IC LB1848M-TRM-E	
IC2201	6-716-779-01	IC TPIC1405ADFDRG4	
		<JACK>	
J901	1-843-020-11	PIN JACK BLOCK 4P	
		<INDUCTOR>	
L301	1-457-874-11	INDUCTOR 10UH	
L303	1-457-874-11	INDUCTOR 10UH	
L304	1-457-874-11	INDUCTOR 10UH	
L307	1-457-874-11	INDUCTOR 10UH	
L602	1-457-223-11	INDUCTOR 0UH	
L701	1-457-374-21	INDUCTOR 0UH	
L702	1-457-374-21	INDUCTOR 0UH	
L703	1-457-374-21	INDUCTOR 0UH	
L704	1-457-374-21	INDUCTOR 0UH	
L902	1-412-979-41	INDUCTOR 1UH	
L903	1-400-675-21	INDUCTOR 10UH	
		<FUSE>	
⚠ PS301	1-523-134-31	FUSE 2A 50V	
⚠ PS302	1-523-135-31	FUSE 3.15A 32V	
		<TRANSISTOR>	
Q302	6-551-184-01	TRANSISTOR MCH6305-TL-E-S	
Q304	6-552-430-01	TR DRC5114E0L	
Q305	6-552-430-01	TR DRC5114E0L	
Q310	6-552-430-01	TR DRC5114E0L	
Q311	6-551-184-01	TRANSISTOR MCH6305-TL-E-S	
Q312	6-552-433-01	TR DRC5115E0L	
Q313	6-552-407-01	TR DSA500100L	
Q314	6-552-430-01	TR DRC5114E0L	
Q315	6-552-430-01	TR DRC5114E0L	
Q316	6-552-430-01	TR DRC5114E0L	
Q501	6-552-433-01	TR DRC5115E0L	
Q502	6-552-433-01	TR DRC5115E0L	
Q702	6-551-714-01	TR INK0001AC1-T112-1	
Q901	6-552-430-01	TR DRC5114E0L	
		<RESISTOR>	
R102	1-208-887-81	METAL CHIP 1K 0.5% 1/16W	
R103	1-208-887-81	METAL CHIP 1K 0.5% 1/16W	
R106	1-218-941-81	METAL CHIP 100 5% 1/16W	
R108	1-208-872-81	METAL CHIP 240 0.5% 1/16W	
R206	1-218-941-81	METAL CHIP 100 5% 1/16W	
R207	1-208-872-81	METAL CHIP 240 0.5% 1/16W	
R301	1-218-977-81	METAL CHIP 100K 5% 1/16W	
R302	1-216-295-91	SHORT CHIP 0	
R304	1-218-953-81	METAL CHIP 1K 5% 1/16W	
R306	1-218-963-81	METAL CHIP 6.8K 5% 1/16W	
R308	1-216-797-91	METAL CHIP 10 5% 1/10W	

Ref-No.	Part No.	Part Description	Remarks
R311	1-208-911-81	METAL CHIP 10K 0.5% 1/16W	
R312	1-208-913-81	METAL CHIP 12K 0.5% 1/16W	
R313	1-208-887-81	METAL CHIP 1K 0.5% 1/16W	
R314	1-208-911-81	METAL CHIP 10K 0.5% 1/16W	
R315	1-218-965-81	METAL CHIP 10K 5% 1/16W	
R318	1-208-905-81	METAL CHIP 5.6K 0.5% 1/16W	
R321	1-208-923-81	METAL CHIP 33K 0.5% 1/16W	
R322	1-208-891-81	METAL CHIP 1.5K 0.5% 1/16W	
R323	1-208-895-81	METAL CHIP 2.2K 0.5% 1/16W	
R324	1-208-911-81	METAL CHIP 10K 0.5% 1/16W	
R327	1-208-902-81	METAL CHIP 4.3K 0.5% 1/16W	
R330	1-208-899-81	METAL CHIP 3.3K 0.5% 1/16W	
R331	1-208-911-81	METAL CHIP 10K 0.5% 1/16W	
R332	1-218-990-81	SHORT CHIP 0	
R333	1-216-295-91	SHORT CHIP 0	
R336	1-218-965-81	METAL CHIP 10K 5% 1/16W	
R343	1-208-872-81	METAL CHIP 240 0.5% 1/16W	
R346	1-208-895-81	METAL CHIP 2.2K 0.5% 1/16W	
R347	1-218-961-81	METAL CHIP 4.7K 5% 1/16W	
R349	1-208-903-81	METAL CHIP 4.7K 0.5% 1/16W	
R350	1-208-913-81	METAL CHIP 12K 0.5% 1/16W	
R351	1-208-895-81	METAL CHIP 2.2K 0.5% 1/16W	
R352	1-218-990-81	SHORT CHIP 0	
R370	1-208-891-81	METAL CHIP 1.5K 0.5% 1/16W	
R371	1-208-895-81	METAL CHIP 2.2K 0.5% 1/16W	
R372	1-208-921-81	METAL CHIP 27K 0.5% 1/16W	
R374	1-218-971-81	METAL CHIP 33K 5% 1/16W	
R375	1-218-971-81	METAL CHIP 33K 5% 1/16W	
R376	1-218-953-81	METAL CHIP 1K 5% 1/16W	
R378	1-218-953-81	METAL CHIP 1K 5% 1/16W	
R379	1-216-295-91	SHORT CHIP 0	
R380	1-216-295-91	SHORT CHIP 0	
R382	1-216-295-91	SHORT CHIP 0	
R383	1-218-971-81	METAL CHIP 33K 5% 1/16W	
R384	1-216-295-91	SHORT CHIP 0	
R389	1-216-295-91	SHORT CHIP 0	
R391	1-218-971-81	METAL CHIP 33K 5% 1/16W	
R392	1-216-825-91	METAL CHIP 2.2K 5% 1/10W	
R393	1-216-825-91	METAL CHIP 2.2K 5% 1/10W	
R394	1-216-295-91	SHORT CHIP 0	
R397	1-218-953-81	METAL CHIP 1K 5% 1/16W	
R399	1-208-895-81	METAL CHIP 2.2K 0.5% 1/16W	
R404	1-208-875-81	METAL CHIP 330 0.5% 1/16W	
R405	1-218-989-81	METAL CHIP 1M 5% 1/16W	
R515	1-218-990-81	SHORT CHIP 0	
R518	1-218-990-81	SHORT CHIP 0	
R519	1-218-965-81	METAL CHIP 10K 5% 1/16W	
R523	1-208-899-81	METAL CHIP 3.3K 0.5% 1/16W	
R524	1-218-965-81	METAL CHIP 10K 5% 1/16W	
R603	1-216-295-91	SHORT CHIP 0	
R605	1-218-965-81	METAL CHIP 10K 5% 1/16W	
R606	1-218-965-81	METAL CHIP 10K 5% 1/16W	
R608	1-208-925-81	METAL CHIP 39K 0.5% 1/16W	
R609	1-208-904-81	METAL CHIP 5.1K 0.5% 1/16W	
R610	1-218-990-81	SHORT CHIP 0	
R631	1-218-990-81	SHORT CHIP 0	
R632	1-218-990-81	SHORT CHIP 0	

Ref-No.	Part No.	Part Description	Remarks
R704	1-216-295-91	SHORT CHIP 0	
R730	1-218-973-81	METAL CHIP 47K 5% 1/16W	
R735	1-218-956-81	METAL CHIP 1.8K 5% 1/16W	
R736	1-218-956-81	METAL CHIP 1.8K 5% 1/16W	
R738	1-218-965-81	METAL CHIP 10K 5% 1/16W	
R756	1-218-965-81	METAL CHIP 10K 5% 1/16W	
R773	1-208-921-81	METAL CHIP 27K 0.5% 1/16W	
R805	1-208-920-81	METAL CHIP 24K 0.5% 1/16W	
R906	1-218-965-81	METAL CHIP 10K 5% 1/16W	
R907	1-218-965-81	METAL CHIP 10K 5% 1/16W	
R914	1-218-973-81	METAL CHIP 47K 5% 1/16W	
R915	1-218-973-81	METAL CHIP 47K 5% 1/16W	
R916	1-208-879-81	METAL CHIP 470 0.5% 1/16W	
R917	1-208-879-81	METAL CHIP 470 0.5% 1/16W	
R920	1-218-990-81	SHORT CHIP 0	
R922	1-218-947-81	METAL CHIP 330 5% 1/16W	
R923	1-218-947-81	METAL CHIP 330 5% 1/16W	
R924	1-220-169-81	METAL CHIP 75 5% 1/16W	
R929	1-218-990-81	SHORT CHIP 0	
R951	1-218-965-81	METAL CHIP 10K 5% 1/16W	
R960	1-216-295-91	SHORT CHIP 0	
R1002	1-218-965-81	METAL CHIP 10K 5% 1/16W	
R1008	1-218-965-81	METAL CHIP 10K 5% 1/16W	
R1009	1-218-965-81	METAL CHIP 10K 5% 1/16W	
R1011	1-218-965-81	METAL CHIP 10K 5% 1/16W	
R1014	1-218-965-81	METAL CHIP 10K 5% 1/16W	
R1016	1-218-965-81	METAL CHIP 10K 5% 1/16W	
R1017	1-218-990-81	SHORT CHIP 0	
R1020	1-218-990-81	SHORT CHIP 0	
R1023	1-218-941-81	METAL CHIP 100 5% 1/16W	
R1028	1-218-965-81	METAL CHIP 10K 5% 1/16W	
R1031	1-218-990-81	SHORT CHIP 0	
R1033	1-218-965-81	METAL CHIP 10K 5% 1/16W	
R1038	1-218-941-81	METAL CHIP 100 5% 1/16W	
R1039	1-218-941-81	METAL CHIP 100 5% 1/16W	
R1040	1-218-941-81	METAL CHIP 100 5% 1/16W	
R1041	1-218-941-81	METAL CHIP 100 5% 1/16W	
R1042	1-218-941-81	METAL CHIP 100 5% 1/16W	
R1043	1-208-923-81	METAL CHIP 33K 0.5% 1/16W	
R1044	1-208-895-81	METAL CHIP 2.2K 0.5% 1/16W	
R1045	1-218-990-81	SHORT CHIP 0	
R1046	1-208-899-81	METAL CHIP 3.3K 0.5% 1/16W	
R1110	1-208-895-81	METAL CHIP 2.2K 0.5% 1/16W	
R1112	1-208-903-81	METAL CHIP 4.7K 0.5% 1/16W	
R1134	1-208-911-81	METAL CHIP 10K 0.5% 1/16W	
R1146	1-208-911-81	METAL CHIP 10K 0.5% 1/16W	
R1163	1-218-965-81	METAL CHIP 10K 5% 1/16W	
R1181	1-218-941-81	METAL CHIP 100 5% 1/16W	
R1191	1-208-904-81	METAL CHIP 5.1K 0.5% 1/16W	
R1192	1-208-903-81	METAL CHIP 4.7K 0.5% 1/16W	
R1193	1-218-990-81	SHORT CHIP 0	
R1273	1-218-973-81	METAL CHIP 47K 5% 1/16W	
R2212	1-218-973-81	METAL CHIP 47K 5% 1/16W	
R2217	1-218-990-81	SHORT CHIP 0	
R2218	1-218-990-81	SHORT CHIP 0	
R2219	1-218-990-81	SHORT CHIP 0	
R2221	1-218-990-81	SHORT CHIP 0	
R2222	1-218-990-81	SHORT CHIP 0	

Ref-No.	Part No.	Part Description	Remarks
R2242	1-218-853-91	METAL CHIP 1.8K 0.5% 1/10W	
R2244	1-218-853-91	METAL CHIP 1.8K 0.5% 1/10W	
R2246	1-218-853-91	METAL CHIP 1.8K 0.5% 1/10W	
R2247	1-248-476-11	RES-CHIP 0.16 1% 1/3W	
R2292	1-218-853-91	METAL CHIP 1.8K 0.5% 1/10W	
R2294	1-218-853-91	METAL CHIP 1.8K 0.5% 1/10W	
R2296	1-218-853-91	METAL CHIP 1.8K 0.5% 1/10W	
		<VARIABLE RESISTOR>	
RB1001	1-234-378-21	RES, NETWORK 10K (1005X4)	
RB1002	1-234-378-21	RES, NETWORK 10K (1005X4)	
RB1004	1-234-378-21	RES, NETWORK 10K (1005X4)	
		<THERMISTOR>	
TH301	1-804-949-11	THERMISTOR, NTC (SMD)	
		<CRYSTAL>	
X401	1-814-417-11	QUARTZ CRYSTAL UNIT(27MHZ)	

REVISION HISTORY

Ver.	Date	Description of Revision
1.0	2011.08	New